

Nation's Business

A USEFUL LOOK AHEAD

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DECEMBER 1956

1957:

EXCLUSIVE SURVEY
**Management's
plans** PAGE 36

Labor's
forecast PAGE 42

Government
viewpoint PAGE 40

Battle forms on Taft-Hartley changes PAGE 25

Local dollars cut school shortage PAGE 32

Management is a 3-part job PAGE 80

Coming: new U. S. atom program PAGE 30

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An intrstng exprmnt in spch

How your words might be
compressed into "shorthand" sound
waves for telephone transmission



Any time we can speed your voice from telephone to telephone with less equipment you're bound to benefit.

One possible way to do this is by a new transmission method which Bell Telephone Laboratories scientists are exploring. You might call it "electronic shorthand."

Actually, it's a method by which samples are snipped off a speech sound—just enough to identify it—and sent by telephone to a receiver that rebuilds the original sound.

The two charts on the right show how this can be done even with a short sound like "or."

Our scientists are putting further research into this idea, which could mean not only improved service but a more economical use of lines as well. Voices could be sent by fewer electrical signals. And more voices could be sent over each wire.

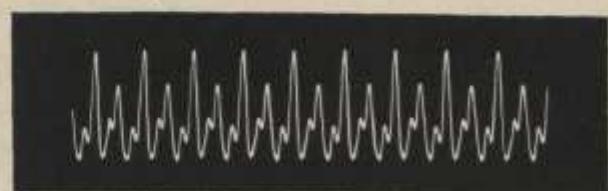
It's exploring and developing like this that make telephone service the bargain it is.

Working together to bring people together

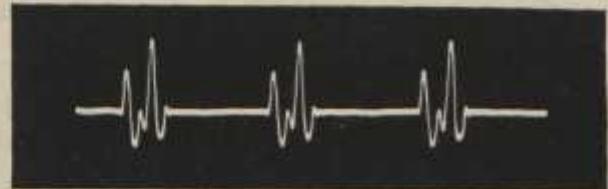
BELL TELEPHONE SYSTEM



YOUR EAR IS OUR CUSTOMER. Bell Laboratories scientist Homer W. Dudley, who originated the "electronic shorthand" method of sending speech, studies wave patterns made by sounds as you would ordinarily hear them over the telephone. To get these sounds from mouth to ear by telephone as quickly and efficiently as possible is our fundamental job.



THIS IS THE SOUND "OR." Chart shows how the oscilloscope records vibrations of the sound "or." Vibrations originate in puffs of air from the larynx when a word is spoken. Electronic machines don't really need all these vibrations to recognize the particular sound.



THIS IS ELECTRONIC SHORTHAND OF THE SOUND "OR." One "pitch period" in three (as against all nine shown in upper chart) has been selected for transmission. With this system, three times as many voices could theoretically travel over the same pair of wires and be rebuilt into the total original sounds.



Uncompleted Survey but this much is known...

TODAY'S industry can find everything it needs . . .

TOMORROW'S will uncover even more in this "Treasure Chest" land

Iron, coal and copper, uranium, oil and chemicals—the raw materials of America's industrial strength—all are here in tremendous quantity.

Incomplete but continuing surveys show unrivaled concentrations of basic wealth underlie the vast Utah, Idaho, Colorado and Wyoming area served by Utah Power & Light Company.

Much is already being put to use, but the surface is barely scratched. It offers opportunity worth your study.

ASK FOR COPY OF "A Treasure Chest in the Growing West." Detailed information is presented in this Area Resource Brochure. Write, wire or telephone for a copy. Inquiries held in strict confidence. Address: W. A. Hawkins, Manager, Business Development Department, Dept. 35, Utah Power & Light Co., Salt Lake City 10, Utah.



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- 60% of U.S.A. phosphate reserves.
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- A gateway to the rich, far west market where America is growing fastest.
- Plus . . . plenty of "elbow room."

UTAH POWER & LIGHT CO.

A Growing Company in a Growing West

Nation's Business

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- 7 Management's Washington Letter
- 10 Letters from Businessmen
- 14 Progress: Stratosphere Gas Holds Business Promise
- 17 TRENDS OF NATION'S BUSINESS
- 17 The State of the Nation Felix Morley
- 21 Washington Mood Edward T. Follard
- 25 Battle Forms on Taft-Hartley Changes
- 28 Navy Rejects \$7 Million Saving
- 30 Coming: New U. S. Atom Program
- 32 Local Dollars Cut School Shortage
- 34 Transportation Faces New Era
- 36 1957: Management's Plans
- 40 1957: Congress Adviser's View
- 42 1957: AFL-CIO Viewpoint
- 44 How's Business? Today's Outlook
- 46 Cities Face Giant House Hunt
- 52 How to Make Jobs Mean More
- 58 Coal's Big Future Touches You
- 62 Tax Returns Will Be Easier
- 68 Drive for Layoff Pay Spreads
- 80 Management is a 3-part Job
- 84 New Techniques Promise Better Living
- 94 Let's Free Atomic Enterprise



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The Cream Always Comes To The Top

FOR MANY YEARS railroad spokesmen have vigorously contended that trucks "skim off the cream" of traffic. Just recently a widely distributed publication of a major rail line said: "Highway carriers skim off the cream. The fact that the average ton-mile revenue of highway carriers is approximately four times that of the railroads indicates the extent to which these carriers seek the higher rate type of traffic between important terminal points."

Does it?

Or does it, rather, indicate that the inherent qualities of truck transport—door-to-door delivery, dispatch, and lower loss and damage, among others—make truck service ideal for certain kinds of traffic which is basically high-rated?

Take less-carload business, for example. It carries the highest rates. Railroads are not geared to handle it physically, and historically they have lost money attempting to compete for this business—total annual

losses running into millions of dollars out of pocket many years. Trucks physically are best able to handle this kind of traffic. Maybe you could call this "cream" for trucks but it is sour milk for railroads.

Or take coal, or any one of a dozen low-rated commodities. Railroads, again for inherent reasons, can haul this traffic and do very well indeed on the profit side. For them it would be "cream." Trucks, except in special situations, aren't as closely tailored to this kind of hauling as are the rails, and such traffic would not be "cream" for trucks.

Whether traffic is "cream" or not "cream" depends upon the shipper's needs and the carrier's ability to meet them efficiently and economically, not whether it is high-rate or low-rate traffic.

Moreover, each carrier's "cream" tends to rise to the top—carriers generally get that business which they can do the best job of handling.



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AMERICAN TRUCKING ASSOCIATIONS, INC., WASHINGTON 6, D.C.

If You've Got It . . . A Truck Brought It!

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At Sargent & Company . . . 4 Verifax copies are made in 1 minute for less than 3¢ each

Sargent & Company, New Haven, Conn., leading manufacturer of locks and hardware, eliminates re-typing and proofreading in order handling.

Three or four copies are needed of each page in a customer's order. Now . . . Sargent & Company gets them in 1 minute for less than 3¢ each with a Kodak Verifax Copier.

Only half as many clerks are now assigned to processing orders, despite a 30% jump in orders handled. And what's most important—there's never a copying mistake or omission. Makes no difference if orders are 50 pages long . . . are written in ink . . . or call for hundreds of different products in Sargent & Company's 2,000-item line.

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1. Answers to questions about orders or related subjects are jotted down in margin or at bottom of letter.

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Customers welcome the speedy reply—the convenience of not having to dig out carbons of their letters for cross reference.

To learn about the many other ingenious short cuts which Verifax copying has brought to thousands of offices, send for free booklet. Or get in touch with your nearest Verifax dealer. You'll find him listed in the yellow pages of the phone book under "Photocopy Equipment."

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For a fighting ship today . . . for your business world tomorrow

The equipment shown above makes a Navy ship as modern in its telephone communication as it is in its fighting power.

It's a *transistorized switchboard*—an electronic marvel, from tomorrow's world, providing telephone service today. Every function of a conventional dial telephone system is included.

The heart of this telephone switchboard beats through transistors and diodes, instead of electro-mechanical switches and relays. The new electronic parts are tiny, incredibly rugged and made with utmost precision. The switchboard itself, employing plug-in *printed circuitry*, takes half the space of conventional types, has theoretically infinite life and says good-bye to the usual problems of dirt, wear and corrosion.

An interesting example of the practical value of such equipment on a naval vessel is that the switchboard can operate in tropic heat or Arctic cold, and that its efficiency actually *increases* at low temperatures. Also, it is proof against shock, such as that from gun fire at critical moments.

We acknowledge the forward-looking co-operation of the Bureau of Ships of the Department of the Navy and we take pride in being a team partner in the development of this "first." We also devote the same engineering know-how to solving electronic and communication problems of home and industry for today and tomorrow.

There are plenty of career opportunities here for Engineers . . . Why not write us?

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management's WASHINGTON LETTER

► FIRST SESSION OF 85th CONGRESS will open next month in atmosphere charged with uncertainty.

Lawmakers will face task of re-evaluating our massive foreign aid program in light of shocks to western alliance.

Started in 1945, foreign aid spending will reach \$59.3 billion by next June.

Administration, Congress will reappraise this spending to determine what aid should be continued, how much, and to whom it should go.

Other problems will be pressing, too.

Some of these will be spelled out in President's messages in January.

Among hottest issues Congress will debate are these:

Taxes--Relief for small business will be keynote here; watch for corporate rate changes.

Minimum wage--Extension of coverage to retailing will be pushed.

Atomic energy--Shapes up as big tussle, with backers of former Gore bill expected to revive efforts to get government into reactor financing, operation.

Opponents will argue that private enterprise can handle this, will work also for amendment to Public Utility Holding Company Act to free private developers from threat of regulation.

Postal rates--Administration will try again to get them raised.

► WORLD UNREST DOESN'T CHANGE optimistic business outlook.

Forces at work in economy seem likely to keep business level high despite international tensions.

NATION'S BUSINESS cross-section survey of executives in leading companies in all fields shows:

Expectation of most business leaders, economists is that 1957 will be record business year.

Here's sample:

Tight money--83 per cent say it won't affect expansion plans for coming year.

What industries are expanding despite tight money?

Survey results appear on page 36.

Government economist looks at 1957 on page 40.

Labor economist on page 42.

► SHIPPERS CAN EXPECT rail freight rate increase of about 7 per cent early in

new year. That's informed view in Washington at this time.

ICC probably will okay eastern and western roads' bid for rate rise on most commodities to meet boosted labor costs.

Rails' request for added 15 per cent hike to meet other costs faces fight, particularly since roads got 6 per cent boost last March.

Also:

Railroads face battle early next year on plans to raise demurrage charges.

That's penalty shippers pay for keeping freight cars overtime.

► CAN FEDERAL BUREAU SOLVE school problems your community faces better than your local officials?

That's issue Congress will debate in coming session.

Watch for many versions of classroom shortages.

Fact is there's shortage of reliable information.

Nation's classroom backlog is based on 1952-53 survey.

Congressional investigation found one state included auditoriums, gymnasiums, multipurpose rooms, others, in classroom backlog estimates.

Less than a third were actually classrooms.

But most states gave only classroom needs.

So findings aren't comparable.

Meanwhile, America's school districts aren't waiting for federal intervention.

They're building new schools at fastest clip ever. See page 32.

► PREMERGER LEGISLATION will get another big push in next Congress.

Such legislation would require companies contemplating merger to give government 90-day advance notification.

What does business think of this?

Here's what new survey by Diversification Institute, Inc., finds:

It's step toward unfair restriction on use of mergers for attaining stability and growth.

Institute polled 500 corporations, got response from 157.

Total of 124 noted that premerger notification requirement would slow merger trend between small and medium-

sized concerns and companies operating in different fields.

Several said prenotification would prejudice and delay negotiations which usually are delicate and confidential, would damage customer relations.

Note: Mergers are contemplated by 32.5 per cent of firms in survey.

► STATE RIGHT-TO-WORK LAWS will be issued in many state legislatures and the new Congress next year.

In two referendum tests last month: Nevada's right-to-work law withstood labor attempts to repeal it.

Washington State failed to enact right-to-work law over labor opposition.

Eighteen states have laws against compulsory unionism, although Louisiana's has been drastically curtailed.

► SOCIAL SECURITY TAXES for 53 million employees, employers, self-employed persons will rise \$700 million next year.

On Jan. 1 tax payments on earnings up to \$4,200 will rise from 2 to 2½ per cent for workers, employers alike.

That's increase from \$84 to \$94.50 per person earning that much.

For self-employed, rate will go up from 3 to 3½ per cent.

Additional increases are scheduled for 1960, 1965, 1970, 1975.

Rates then will reach 4½ per cent for employers and employees, 6½ per cent for self-employed.

► UNCLE SAM IS MAPPING STEPS to lure investors to his nationwide multimillion dollar lease-purchase building program.

In next 6 months General Services Administration will seek bids on \$700 million worth of construction.

Included: New courthouses, post offices, other federal buildings.

Under lease-purchase, investor puts up money and holds title to building, the government buys it back over 10 to 25 years in form of rent, plus interest.

Catch is that U.S. hasn't been able to find many takers.

So bigger push is planned, more advertising, promotion, meetings with bankers, etc.

Government blames hesitancy of investors on tight money, lack of publicity, present 4 per cent maximum in-

terest. Only one project is now under construction—a post office and courthouse at Rock Island, Ill.

► SPOTLIGHT WILL SHINE on labor racketeering early next year.

Senate subcommittee is digging up evidence involving so-called paper locals run by gangsters.

Staff investigators expect to finish work by February.

Public hearings will follow.

► WATCH FOR GROWING PRESSURE to define size, scope, nature of the burgeoning private atomic industry.

AEC has man drafting framework in which first statistics on atomic industries can be collected, analyzed.

Actual job of data-gathering will be turned over to Census Bureau under present plans.

Kind of data to be collected:

Number of companies making reactor fuels, components, number of persons employed in this work, total sales.

Atomic industry data would fit into census statistics on manufacturing industries, constitute supplement to Census of Manufactures.

► SPORTS ARE GOOD for workers' health.

But they also can give you nagging lost-time problem.

That's shown in findings of study by corporation with 100,000 workers.

Company--Du Pont--finds nearly twice as many of its employes get hurt in sports as at work.

Biggest risk is baseball.

Others: Basketball, football, skating, hunting, fishing, bowling, boating.

Safety engineers say problem is serious enough to warrant campaign for off-job safety.

Note: Even dancing can be dangerous.

Three Du Pont employes were seriously hurt while dancing in past 3 years.

Nobody was hurt wrestling in that period.

► ATTENTION SMALL FIRMS--initial task force report is due early next month on multibillion dollar government procurement policies.

Task force includes Defense Department, General Services Administration,

management's WASHINGTON LETTER

Atomic Energy Commission, Veterans Administration, other agencies that buy from private industry.

They're reviewing procurement laws, policies, with view toward making sure small business gets bigger share of federal business.

Full report of task force will be out in about a year.

►ARMED FORCES ACT to put their operations on more businesslike basis.

You'll hear more about this in days ahead.

Army leads the way with little-known Command Management School, Fort Belvoir, Va., where top brass of all services get training in latest management techniques.

Improved financial management is big target of training program.

Army says this is being achieved, with reduced military inventories, more efficiency.

Pressure for better management in services originated in Hoover Commission recommendations.

School has graduated 945 military men and military-employed civilians to date.

►TAXPAYERS MAY FOOT BILL for eve-of-retirement training of top Navy brass.

Under consideration:

Training designed to ready naval officers of captain, admiral rank for post-retirement jobs in industry.

National management training organization has been asked to make pilot test of program.

Training would help officers make transition from military to industrial way of doing things.

Commissioned officers of armed forces are good manpower source--2,000 of them retire each year.

Item: Since War II hundreds of military leaders have retired to become presidents, board chairmen, take other high jobs in U.S. companies.

►DON'T TRY TO KILL the office grapevine--make it work for you.

That's advice of leading management experts who have analyzed part which grapevine plays in communication.

New study shows values of grapevine are many.

It fills gaps in formal communication

channels, helps groups develop interest in their work.

Most of all, it provides emotional safety valve for workers.

But grapevine needs guidance, control.

Smart managers, experts say, will learn to feed it facts, thus reduce damage of wild rumors.

One way to do this is to identify key opinion leaders in grapevine, give them the word you want spread.

►MANY FIRMS WILL WANT to see results of a new census study.

This one--a national housing inventory --got under way last month.

Data will be made available about middle of next year.

Study will show number of housing units in U.S., their type, condition, trends in heating methods.

Second phase of the study will include housing data for 9 selected metropolitan areas.

Cost: \$1 million.

Results will give construction firms, real estate dealers, city planners, economic analysts, others excellent tools for assessing nation's housing needs.

This basic information also will shed light on market prospects for such things as household goods, consumer products, service industries.

►LOOK FOR: America's work force to exceed 90 million by 1975, average rise of 750,000 to 1 million gainfully employed each year...

Passenger flights to Europe to be increased in coming year. CAA says survey of civil aircraft crossing Atlantic found daily average is 86--one passenger plane every 17 minutes...

Trade promotion planning calendar (gives lead time reminders on biggest retail seasons) for 50 cents from Domestic Distribution Dep't., National Chamber, Washington 6, D. C....

Aluminum consumption to exceed 3 million tons by 1960, at least 5 million tons by 1957. U.S. production has increased tenfold since 1939...

Building costs to be slightly higher in 1957. Construction specialists say bidding up of materials costs, labor shortages are causes.

Fire! But this building didn't burn



Butler building and contents remained undamaged after this severe oil fire.

it's a fire-safe **BUTLER metal building**

Time and again, fire-safe Butler metal buildings have earned an unexpected bonus for their owners. In roaring infernos, they have shielded their contents—with only a few dollars worth of damage to easily replaceable covering panels. They have contained interior fires, leaving surrounding inflammable buildings untouched.

If fire strikes your present buildings—rebuild with Butler. Half finished at the factory—they are bolt-assembled in less than half the usual erection time. Besides being fire-safe, there are many more important Butler construction features that save you important money.

For the full story why Butler metal buildings are your safest and best buy, phone or write your Butler Builder. His name is listed under "Buildings" in the yellow pages of your telephone directory. Or write direct.



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Letters from businessmen

3 kinds of bankers

I have just read your article, "6 Steps to Executive Success," and am reminded of what one sage old country banker said:

"There are three kinds of small town bankers: Those that let their customers run their bank; those that let their employees run their bank; those that run it themselves."

WILEY GREEN,
President,
Wauneta Falls Bank
Wauneta, Nebr.

Inside Red China

The Reserve general training office of this headquarters is preparing instructional material for USAF reservists . . . in over 1,100 units throughout the country. Permission is requested to include "Formosa: As Red China Sees It," as supplementary material for a lesson tentatively entitled "Inside Red China," which is scheduled for presentation in May, 1957. The exercises are printed in 40,000 copies.

FRANCIS R. STOKES,
Captain, USAF,
Air Command and Staff College
Maxwell Air Force Base, Ala.

►Permission granted.

High caliber

Please forward to my attention 10 copies of "Why Workers Walk Out" (October issue). Articles of this caliber are certainly a credit to your publication.

H. C. SCHUTRUM,
S. M. Flickinger Co., Inc.
Elmira, N.Y.

Conspicuous leader

The trend of NATION'S BUSINESS toward articles on manager development is one which is highly desirable and makes your periodical a conspicuous leader in the field. Keep it up, by all means. I would like a subscription for our Supervisors' and Foreman's Council Library.

ROBERT W. DINGMAN,
Training Administrator,
Propeller Division,
Curtiss-Wright Corporation,
Caldwell, N.J.

Powerful weapon

Your article in the October issue entitled "Two Words That Russia Hates," ["State of the Nation," by Felix Morley] is most impressive—a clear, concise statement of our most powerful weapon in the cold war. Keith Funston is doing his part,

and Putnam & Company in Hartford is making a splendid local contribution in distributing the ownership of American industry. It is devoutly to be hoped that all of the rest of us can find a way to help. Also, I trust that the one thing that could upset this program—a severe market collapse—may never occur.

D. HAYES MURPHY,
Chairman,
The Wiremold Company,
Hartford, Conn.

Where you'll find time

Will appreciate your sending me 20 reprints of "Make the Time You Need." I found it extremely interesting and wish to supply our top administrative men with copies.

FRED M. FARWELL,
President,
Underwood Corporation,
New York, N.Y.

. . . Absolutely one of the best articles on this subject I have ever read.

IRVIN J. MATHEWS,
Mathews Nursery & Seed Co.,
Gary, Ind.

. . . I would like to pass it on to other members of this organization.

W. E. WARD,
Manager, Minneapolis Office,
Johnson Service Company,
Minneapolis, Minn.

. . . I was much impressed.

PETER M. ANDERSON,
Dun & Bradstreet, Inc.,
Rochester, N.Y.

. . . "Make the Time You Need" was one of the most conclusive pieces of constructive criticism I have read in ages.

G. L. MILLER,
Assistant to the President,
Mercer Robinson Engineering Corp.,
Clifton, N.J.

. . . This article helped me to better evaluate my time, and I wish to forward reprints to salesmen who work for me. I am sure it will help them in better planning of their time.

J. D. HUGHES,
Zone Manager,
Delco Products,
Dayton, O.

►781 requests for 19,229 reprints thus far.

Can't or won't?

One of the major teaching problems at New York University is caused by the fact that our students cannot or will not read literature found in professional or trade journals that is helpful in present divergent viewpoints. In order to over-



Dore Schary, Head of M-G-M Studios, tells how:

"I send Liz Taylor home every night!"

"'Raintree County' is colossal in every respect — including its problems! Shooting schedules have to be kept. Release dates have to be met. Over \$5,000,000 is at stake!"

"Yet, each night we have to send Elizabeth Taylor's 'rushes' — and all the others, too — from location in Kentucky back to Hollywood for processing. Then, re-take if necessary — or go ahead."

"We never slipped off schedule — thanks to Air Express!"

"With Air Express picking up the cans of film, flying them out immediately, meeting them by radio-controlled truck for faster delivery — this major problem was solved without a single delay!"

"And yet, most of our shipments cost less than any other air service. 15 lbs., for instance, Lexington, Kentucky, to Los Angeles, California, is \$10.91. It's the lowest-priced complete air service by \$1.09!"



Air Express



GETS THERE FIRST via U.S. Scheduled Airlines

CALL AIR EXPRESS . . . division of RAILWAY EXPRESS AGENCY

Consult COMMERCIAL CREDIT

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—\$25,000 or MILLIONS

Knowledge of this COMMERCIAL CREDIT method of advancing funds to supplement working capital may make it possible for you to take advantage of business opportunities that might otherwise be missed. Experience has proved that COMMERCIAL CREDIT's Commercial Financing Plan is usually able to provide more cash than is available from other sources. Important also, is the fact that this plan provides funds continuously (if needed) without negotiation for renewal.

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come this problem and supplement our teaching, we are preparing an annual selection of pertinent articles which cover the field of marketing. We would like permission to reproduce "America Needs a Million Salesmen," (August, 1955 issue).

GEORGE F. FREY,
*Instructor of Marketing,
New York University,
New York, N.Y.*

►Permission granted.

Can computers help?

Enclosed is 15 cents for one copy of "What Computers Can Do for You" (October issue).

W. J. BAYER,
*E.I. duPont de Nemours & Company,
Wilmington, Del.*

We would appreciate your forwarding to us 200 reprints of "What Computers Can Do for You" (October issue). We found the article most informative and interesting. Naturally we are vitally interested in the field of electronic machines, but we felt the article was such that it should benefit the reader regardless of his type of business.

TEDI LEVI,
*Secretary-Treasurer,
Electronic Data Processing Corp.,
Vicksburg, Miss.*

Makes a deal

Will you please send me one dozen reprints of "Lease-back Frees Operating Capital?" [July issue]. This article was so complete and understandable that it just helped me make a business deal.

CLIFTON H. DAVIS,
Oklahoma City, Okla.

Good impression

We should appreciate it if you would put us on your list to receive NATION'S BUSINESS. We were very favorably impressed by the articles and also by the advertiser coverage in the issues we have read.

ROBERT A. BEHM,
*President,
Power Springs Inc.,
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Your article in the August issue entitled "Hiring Tips You Can Use," is certainly interesting and informative. We would like to include this type of information in our training program. Are reprints available?

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PROGRESS:

Stratosphere gas holds business promise

SCIENTISTS are intensifying their study of a paradoxical chemical which may hold solutions to a number of national and industrial problems.

The chemical is ozone, and scientists are not sure whether it is man's friend or foe. Like many other chemicals, it can be both.

Taken in large enough doses by humans, ozone can be fatal. It also attacks and cracks rubber, and is so unstable that the mere process of producing liquid ozone frequently results in explosion.

On the other hand, ozone's useful qualities have been exploited as an oxidizing agent in water purification, bleaching, food preservation and pharmaceutical synthesizing.

Because of its purification properties, ozone may be the key to the national and industrial problem of water pollution. Ozone is a by-product of industrial smog, and research now going on may shed light on the solution to this community problem. Future research may also concentrate on the development of the practical use of ozone in the bleaching of textiles and other goods.

Ozone is a pale blue gas whose molecules have three atoms of oxygen instead of the usual two in ordinary oxygen. Normally, it is found in extremely small concentrations wherever oxygen is present. Larger quantities are found in the stratosphere where it is formed by the action of the sun's ultraviolet rays on oxygen.

Tests with rockets and balloons have indicated that concentrations from 10 to 20 parts per million normally occur at altitudes from 35 to 45 miles. Atmospheric disturbances and normal downdrafts bring some of this ozone to the earth's surface in varying—but very minute—amounts, depending upon the latitude and weather conditions.

Ozone frequently is generated by an electrical discharge during a thunderstorm, and often that fresh smell or feeling after a bolt of light-

ning is the result of the purifying effects of ozone.

A trained nose can identify ozone in quantities as low as one part in 100 million and anyone can easily recognize concentrations approximating one part in 10 million. Ozone's odor has been described as similar to that of clover, new mown hay, chlorine, and nitric acid, depending on the concentration.

Ultraviolet lamps that produce extremely minute amounts of ozone are finding a place in many washrooms as deodorizers and purifiers. Ozone also is used in some automatic driers and by some laundries to give laundry a fresh, clean odor as though hung out in the sunlight.

The commercial method of preparing this interesting material consists of passing dry oxygen through a silent electrical discharge. Several companies are manufacturing machinery to produce large amounts of ozone for commercial use.

Ozone presents a paradox. High above the surface of the earth hangs this layer of poisonous gas that is of immeasurable benefit to mankind. If it were not for this layer that absorbs the sun's strong ultraviolet rays, it is possible that life as we know it on earth could not exist.

On the other hand, this ozone curtain may delay man from taking steps into outer space. The affect it will have on men and materials that may attempt to pass through it is not determined.

Although the existence of ozone has been known for more than 100 years, much is still to be learned about its chemical behavior and potential uses. Only recently have we been able to study ozone in its pure form.

Ozone has a high germicidal activity on certain bacterial organisms, and has been used for many years in both Europe and the United States as an ideal water purification agent. Concentrations of less than one part per million will completely sterilize water and at the same time effectively deodorize and clarify

water if it contains phenol or iron and manganese salts. Algae and certain fungus growths not destroyed by chlorine are highly susceptible to ozone treatment.

In 1940, tests were made on the lower bay of Lake Michigan which supplies water to Whiting, Ind. The water was so polluted that the cost of treating it by conventional methods was prohibitive. Ozone was used with outstanding results.

Equally important is the fact that ozone may permit us to cure the problem of water pollution at its source. It is possible that industry can use ozone to purify its waste. Perhaps ozone will turn out to be our most important weapon yet in the fight against pollution.

Bleaching is another of ozone's qualities. Bleaching of oils, waxes, ivory, flour, starches, and other products has been costly, but the use of ozone has rendered the task relatively simple and inexpensive in some cases.

However, ozone seems to have an avidity for unsaturated products, and, thus, poses a problem in the bleaching of textiles and other goods. This presents a wide open field for research that probably will become quite active in the years ahead.

Ozone has been used also to inhibit the formation of molds and bacteria in cold storage chambers, in air conditioning units, in the quick drying of printing inks and varnishes, and for rapid aging of wood, wine, and whisky.

Recently an interesting report came out of Germany about a dentist who used ozone to sterilize and clean cavities before inserting the fillings.

During World War II the Germans attempted to develop an ozone-propelled rocket to bomb New York City. Fortunately, they failed to solve some of the technical problems.

Ozone research has been going on at Armour Research Foundation of Illinois Institute of Technology, Chicago, since 1941. In that year two ARF scientists began to devote part-time study to the influence of temperature on ozonizer efficiency.

In 1946 Foundation scientists accidentally produced liquid ozone without causing an explosion. When they tried to do it again they succeeded in blowing up a laboratory. But the Foundation continued its research and improved its methods with the result that a patent was issued to three Armour engineers for the production of stable liquid ozone by passing oxygen over a hot copper oxide catalyst.

More recently, the Foundation has been involved in research on ozone toxicity and its tolerance level

(Continued on page 57)

A phone call from YOU to him

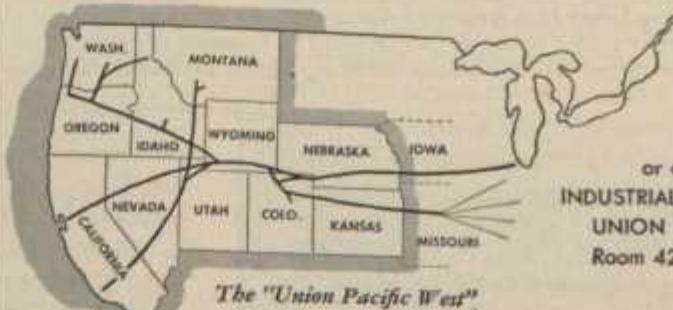
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Trends of Nation's Business



THE STATE OF THE NATION BY FELIX MORLEY

Centralized government, here or abroad, destroys self-government

BALLOTS in all of our free United States, and bullets across a large proportion of the old world—in both cases they have been lately strewn as thick as autumn leaves. And in both cases the strength of popular participation—in the voting and in the shooting—has a vital political moral. It is the vast superiority of a decentralized governmental system over those which practice highly centralized rule. In the one case the people really control the office holders. In the other, those holding political power dictate the course of national action—absolutely in the case of Soviet Russia, but also all too arbitrarily under the centralized system that is approved for Great Britain and France.

So it was no mere coincidence that tragedy flamed out on so broad a foreign front just as our own orderly election procedures reached their quadrennial climax. The influence of the American Way on other people has become very persuasive. The entire world now gives ear to that creed which sounded so extraordinary when first voiced in our Declaration of Independence—that governments derive "their just powers from the consent of the governed." By equally secret, though wholly separate, decisions the rulers in Moscow, and in London and Paris together, sought to flout that great truth at a time when the United States seemed wholly

concerned with its own domestic affairs. The appalling results show that the time is past when the consent of the governed can be taken for granted by any chief executive.

• • •

The dreadful sequence of disorder started, ironically enough, from an attempt in Moscow to make some modifications in the Soviet system of absolute tyranny. Under Stalin the communist empire had been developed as the crudest possible form of personal dictatorship. His handpicked henchmen ruled the conquered satellites of eastern Europe. Those entrusted with local authority, in Warsaw, Budapest, Prague or other former capitals, were not even dedicated communists so much as loyal lieutenants of the tyrant. Unquestionable fidelity to him was the primary qualification for exercising power.

With Stalin dead, and following the uneasy interim of Malenkov's rule, the palace guard in Moscow attempted to liberalize this primitive arrangement. Unconcealable discontent, throughout all of Eastern Europe, was undoubtedly one reason for the decision. Alone in the communist hierarchy, Tito of Yugoslavia had defied Stalin and maintained independence for the state he ruled. So it was planned to make a virtue of necessity; to downgrade Stalin and upgrade national communists like Tito, wherever they had not already been liquidated. The clear objective was a great communist

State of the nation

federation which would to some extent recognize the nationalism of the dependent states, yet keep them in all essentials under Kremlin control. Indeed this was the original formula of that brilliant communist theoretician, Leon Trotsky, who saw it as the perfect device for achieving world revolution.

But the fatal flaw in the design is that the national spirit demands more than a restricted and grudging recognition. A people with traditions like those of Hungary cannot be fobbed off with a separate flag, or a map that prints the area of their country in a different color. These are only symbols for those characteristic institutions, such as churches and schools, in which the love of country really roots.

What people really want is Home Rule and this can at best be nominal if all the fundamentals are decided in a distant capital. So the Hungarians rose for real self-government, which is of course incompatible with any form of communism. And the sequel showed how little the down-grading of Stalin had really meant.

The instinct for self-government, however, is deep-rooted among all men. They have it in Egypt as well as in Hungary. It will resist not merely communist dictatorship, but even the most enlightened government imposed by aliens. And this the British and French, who have little home rule in their own compact and highly centralized little countries, have seemed to forget. Doubtless Colonel Nasser had proved himself both arbitrary and arrogant. But to his people that did not make him less of a patriot. Nasser's defects did not and could not justify a violation of that law of politics, written into the foundations of our own American system, which says that governments derive their just powers from the consent of the governed.

Any violation of that law is, from the American viewpoint, unjust, and therefore makes it impossible for an American Government to indorse the violation. The governments of Great Britain and France, as well as that of Soviet Russia, have flouted not merely the principles of the United Nations, but also those on which our political system is based. And that, of course, has added immeasurably to the current confusion. Such a disaster, even if it does not get wholly out of hand, cannot be immediately repaired. It was, undoubtedly, a realization of the realignment of thinking now needed that led to the torrent of votes for the re-election of Mr. Eisenhower, made somewhat paradoxical by the failure of his political party to win the representative House. Of the two major candidates, the President was much the more forth-

right in saying that our federal system, emphasizing government with the consent of the governed, must be preserved. The Republican Party is less explicit on that point than is its leader.

• • •

Nevertheless, it will not be easy, in the stormy seas now surrounding us, to chart the narrow course between the hazards of an inadequate national defense and the risks of a loss of home rule and local vitality through excessive federal taxation and overcentralization. A part of the insidious threat that Soviet Russia poses for us is the pressure to centralize in order to make our nation strong. This is the point on which clear thinking, by all of us, is essential.

Centralization of power certainly gives a nation the outward manifestations of strength. It mobilizes resources so that they can be deployed quickly in any direction, at any time. But if this apparent gain is made at the expense of local initiative and free enterprise, its long-range value is very questionable. The British and French were in a position to act quickly in their invasion of Egypt. The Russians acted with even more grim efficiency in smashing the heroic pockets of Hungarian resistance. But it is much to be doubted that any of these governments gained in strength by their various exhibitions of military power. The opposite is suggested by the anxiety of each side to focus popular attention on the misdeeds of the other.

History also strongly suggests that decadence, rather than grandeur, is the eventual lot of any people that permits continuous concentration of power in the hands of a centralized government. In the United States that outcome is made less likely by a Constitution dedicated to the preservation of local autonomy and individual liberty. And only a short-range reasoning would argue that the best way to meet the unquestionable threat of a centralized communism is by the development of a centralized Americanism.

• • •

In fact, centralized Americanism is a contradiction in terms. And perhaps the greatest value in an American Presidential election is that it periodically emphasizes the federal character of our government. The system of electoral votes, criticized by many who do not understand the thought behind it, is a constant reminder of the sovereign rights of our 48 states. The President is elected by the states, voting separately as such, rather than by the people compounded into one centralized and subjected mass. In consequence, there is no need for bayonets at our polls, and dissent is expressed by ballots instead of bullets.

It would be pleasant to think that the official Russian observers of our recent election have reported at home to that effect. But that is most unlikely.



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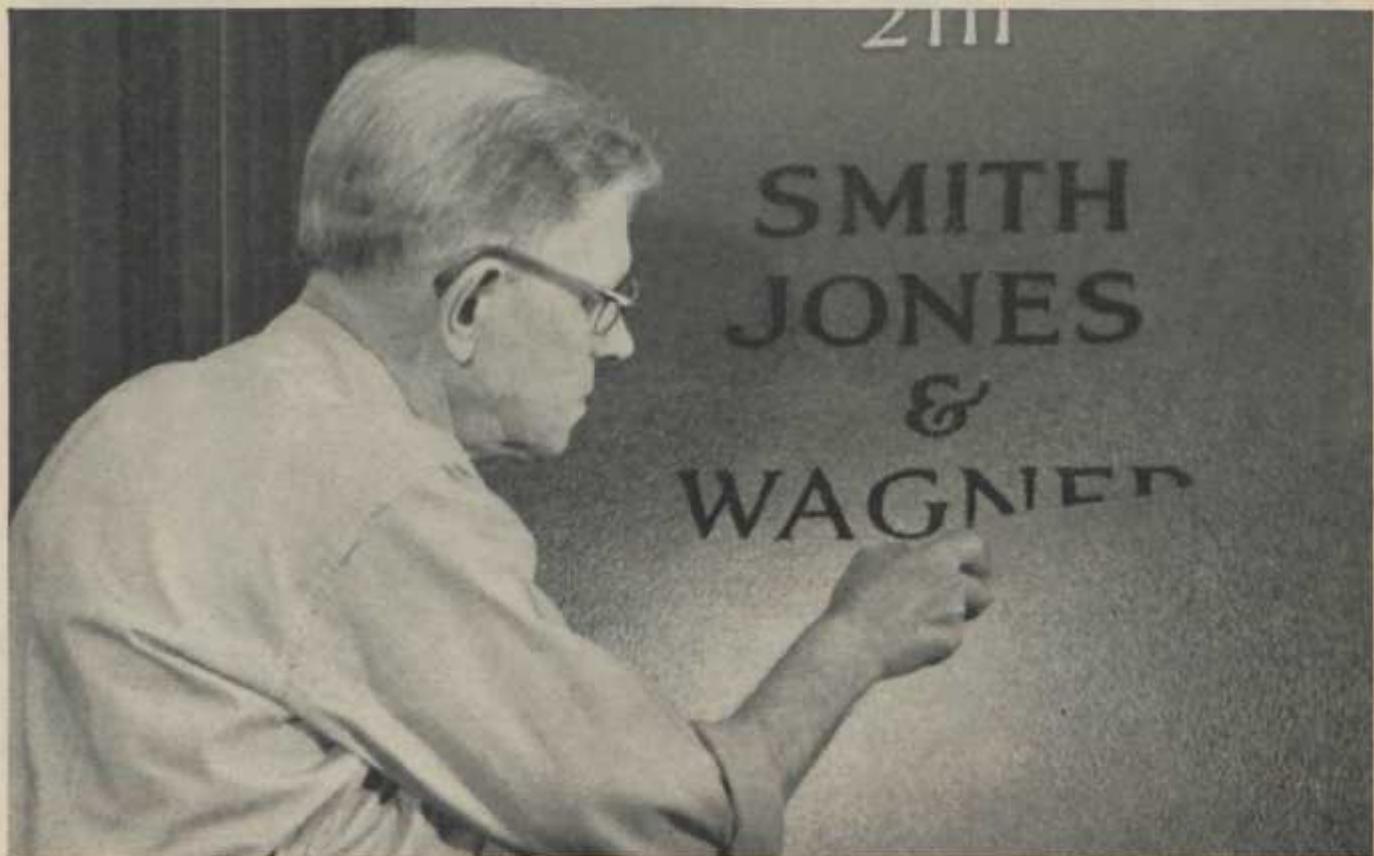
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Trends of Nation's Business



WASHINGTON MOOD

BY EDWARD T. FOLLIARD

Strategy in coming Congress may upset predictions

THE SITUATION in Washington—a Republican President and a Democratic Congress—is causing no alarm or anxiety.

For one thing, a divided government was widely foreseen and openly predicted, in spite of the fact that one had to go back more than a century to find a parallel. Back in 1848, Zachary Taylor, a Whig, was elected President and the Democrats won control of both the Senate and the House.

For another thing, Washington had seen in the past two years that the country got along pretty well with a Republican in the White House and Democrats in control on Capitol Hill.

In the 1954 midterm election, which brought

about divided government, President Eisenhower waged a vigorous fight to keep his Republicans in control of Congress. He flew to all parts of the country, warning the voters (in words prepared for him by frightened Republican ghost writers) that a split government would mean "political maneuverings, stagnation and inactivity"; that it would mean "a cold war of partisan politics," and that, with two drivers at the wheel, the country would surely land in the ditch.

Once the '54 election was past, and the Democrats had taken over the Capitol, the Chief Executive confessed that the language he had used was too strong. He said he certainly should not have used the term "cold war" to illustrate the differences "between me and some of my friends in the other party." He said he thought he would get co-operation from the Democratic-controlled Congress. To a large extent, he did.

• • •

In the 1956 campaign, it was noticed, the President was more careful about his language. He urged his audiences to vote the straight Republican ticket. But in putting in plugs for men like Duff of Pennsylvania, Bender of Ohio, Langlie of Washington and McKay of Oregon (all of whom were in trouble and all of whom lost) he said nothing about the danger of a split government.

Neither did he say that the bright future he foresaw for the United States, which he talked about in nearly every speech, hinged on a Republican Congress as well as a Republican President.

Addressing an airport crowd at Jacksonville, Fla., Oct. 29, General Eisenhower saw the country moving into "a golden age of promise."

"Consider," he said, "what the dimensions and character of that age can be. It can be an America with an annual production approaching the \$600 billion mark in another ten years. It can be an America rising to fill new employment at a rate of 70 million jobs four years hence—an America whose spreading prosperity will mightily support our efforts to wipe out the last vestiges of poverty and discrimination.... It can be an America leading the search for a just and lasting peace in the world and, with God's help, succeeding."

As he spoke a rebellion was raging in Hungary, and before the day was over he was to get word that Israel had invaded Egypt. These events led him to break off his campaigning.

In a postelection analysis, some of the Democratic strategists said that the uproar overseas had decided the outcome—thrown the victory to President Eisenhower. They contended that, until then, it had been a "hoss race." The threat of war, they said, persuaded millions of Americans to switch from Adlai Stevenson to the President because of the old don't-change-horses argument.

That almost certainly was not the case. The threat of war did increase the President's majority

Washington mood

in the popular vote and in the Electoral College, but at no time was the race really close. President Eisenhower was a heavy favorite from the outset, in the polls, the betting odds and in the judgment of the country's top political reporters. All he needed to do was to convince the voters that he was physically able to do the job.

There is always the danger of oversimplifying an American election, but the story of Nov. 6 seems to have been this: President Eisenhower won the vote of Joe Smith; generally speaking, Republican candidates for Congress did not. Joe—otherwise known as the "little guy"—split his ticket as never before, and the result was a continuation of split government.

It was no reflection on Mr. Stevenson that he was beaten. Any other Democrat would have been beaten, too, and probably even more convincingly. Having traveled in the campaign with both standard-bearers, I could never foresee any result but the one that came on Nov. 6. It was the same with other Washington political writers, including those who were pro-Stevenson.

There was simply nothing that Mr. Stevenson could do to break through the President's massive popularity.

He was up against a man who has the same effect on millions of his countrymen that the unfurling of the flag and the playing of the Star Spangled Banner has on them. He was up against a man whose very appearance seems to make people feel happy and enriched.

• • •

Some of Mr. Stevenson's Democratic critics might have been more charitable if they had seen those rapturous Eisenhower crowds.

I noticed, in traveling with the Democratic nominee, that he got the loudest cheers when he said: "We've got to take the government away from General Motors, and give it back to Joe Smith." This would evoke cries of "Give 'em hell, Adlai. Pour it on."

"The Democratic Party," he would say, "is the party of the people—it is the party of Joe Smith and Jane Smith. We are not against big business. We just do not want to be ruled by it and smothered by it."

But, it was to President Eisenhower that the Joe Smiths and the Jane Smiths turned on Election Day—a great many of them, at any rate. Members of organized labor, however they may have voted for candidates for Congress, flocked to his banner; otherwise he would never have piled up the vote he did in Chicago and other industrial centers.

The average American has now probably had enough politics to last him for a long time. Not

so the professionals. The pros are already looking ahead to the congressional elections of 1958 and the presidential election of 1960.

The Democrats are far from being downhearted. If anything, they are even more hopeful than the Republicans as they look ahead to 1960. They admit that General Eisenhower walloped Mr. Stevenson, taking 41 out of the 48 states. But, they argue, it was a personal, not a party, triumph; the Democratic Party, by winning majorities in the Senate and House, demonstrated again that it was the country's dominant political organization.

The twenty-second amendment to the Constitution prohibits a third-term try by General Eisenhower in the unlikely event that he would want to run again.

Who do the Republicans have besides the soldier-statesman, the Democrats ask, who can win the vote of Joe Smith? They answer: Nobody.

• • •

The Republicans don't accept that, naturally. They count on the President to make good on his promise to rebuild and strengthen the Grand Old Party. Four years is a long time, the Republicans remind you, and if they are good years, attended by peace and prosperity, they may very well put the United States in a mood to choose another Republican for President in 1960.

Some of the pundits here are predicting that we will now see a ferocious struggle in both parties for the presidential nominations.

Vice President Richard M. Nixon leads, of course, in the speculation about a G.O.P. standard-bearer four years from now. Two other Californians are seen as his rivals: Sen. William F. Knowland and Gov. Goodwin Knight. There is also talk about Senator-elect John Sherman Cooper of Kentucky.

Whether Adlai Stevenson will emulate William Jennings Bryan and try for a third Democratic nomination is a question that remains unanswered as yet. The pros think it is unlikely, even though many Democrats still think Mr. Stevenson is the ablest man in the party, one who just had the misfortune to come along at the wrong time.

The Democrats talk about Senators Estes Kefauver of Tennessee, Lyndon Johnson of Texas, Hubert Humphrey of Minnesota, John F. Kennedy of Massachusetts, and a newcomer, Senator-elect Joseph S. Clark, Jr., of Pennsylvania; and governors G. Mennen (Soapy) Williams of Michigan, George M. Leader of Pennsylvania and Robert B. Meyner of New Jersey.

It could be that predictions that this next Congress will be intensely political are all wrong. The American voter has shown now that he is more discriminating than he has ever been, and thinks little of party regularity. For that reason, the smart fellows may decide on an old stratagem—that in certain situations the best politics is no politics at all.



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BATTLE FORMS ON TAFT-HARTLEY CHANGES

Three basic issues are key to how Congress may revise labor law, affect your business

- ✓ COMPULSORY UNIONISM
- ✓ SECONDARY BOYCOTTS
- ✓ STATE LABOR LAWS

THE TAFT-HARTLEY fight coming up in the 85th Congress will hinge on three basic issues. These are: compulsory unionism, secondary boycotts, and state labor laws.

There will be other issues and some less controversial amendments will be proposed, but these three are the real keys to congressional action next session.

What happens on them will largely determine whether Taft-Hartley will be amended, and in what ways. Both sides already are weighing the sentiment in the new Congress with respect to these issues.

Taft-Hartley has been a hot issue in every Congress since the 80th passed it under the title, Labor Management Relations Act, 1947. It absorbed major provisions of the 1935 National Labor Relations Act, commonly called the Wagner Act, and added others in an attempt to put some balance in labor-management relations ground rules.

With one minor exception, all attempts to repeal or amend Taft-Hartley have failed.

The one change came in 1951, when a requirement for polling employees on whether to authorize their union to seek a compulsory union membership agreement was eliminated.

Next year's fight will be different. With more than nine years' experience under the law and increasing deference to political realities, both sides have changed their attitudes toward it.

To bring you this new look at Taft-Hartley, NATION'S BUSINESS editors talked with persons who will have much to say about any amendments. They included union and business leaders, members of Congress, govern-

*9 years
have changed
attitudes:*



ment officials, experts who helped draft and put the law through, and others who have played prominent roles in the shifting Taft-Hartley tussle.

We sought answers to such questions as:

- What will the fight be about? The real issues?
- What changes do labor and management, Democrats and Republicans, really want?
- What changes have a chance of getting through?
- What stake does the worker have in the outcome?

The range of reaction reached extremes after Taft-Hartley replaced the Wagner Act on Aug. 22, 1947.

Labor officials condemned the measure as a slave labor act while many employers defended it, with some even hailing it as a bill of rights for the worker.

Taft-Hartley was damned by President Truman and Democratic leaders, although more Democrats voted for than against it in both the Senate and the House. With organized labor, they clamored for repeal.

Republicans, who controlled Congress when the law was passed over President Truman's veto, defended the law while recognizing that it was not perfect and should be improved as experience dictated. The late Sen. Robert A. Taft, coauthor, was the first to admit that amendments were desirable. He pushed a number of them through the Senate in 1949, only to have them die in the House through maneuvering of labor lobbyists and their friends who didn't like some proposed House amendments.

President Eisenhower has been urging passage of 14 amendments which he first proposed in 1954. He is expected to press for them again next year.

Changed attitudes are evident.

AFL-CIO President George Meany has admitted that the Wagner Act was one-sided, although he charges that Taft-Hartley has swung the pendulum too far in the other direction. While Democrats still pledge repeal, the AFL-CIO has abandoned that slogan and is asking, instead, for a complete overhaul to make the law "fair and just to labor and management alike."

Republicans are pledged to "revise and improve" the law. Secretary of Labor James P. Mitchell has raised labor's hopes by setting up a joint labor-management committee in the construction industry as a first step toward keeping that pledge.

The joint committee, according to Secretary Mitchell, will develop specific recommendations for Taft-Hartley amendments to deal with special problems of the construction industry. Whether union and contractors can agree on amendments remains to be seen. Some contractors with a long history of union relations will be inclined to go along with amendments the unions want. Others will resist them and, in fact, will fight for strengthening amendments to correct labor abuses in construction.

Many employers and business groups have found things they don't like, either in the law or its interpretation, which they feel Congress should correct.

Both labor and management want changes.

Union officials complain about noncommunist affidavits they have to sign, court injunctions, job rights of workers who strike for economic gains, free speech for employers, and many other things.

But what labor really wants are two basic changes.

The first of these is protection of compulsory union membership contracts everywhere by repealing Taft-Hartley's Section 14(b), which gives life to state right-to-work laws.

Labor fears that the right-to-work principle, which makes it illegal to require a worker to join a union to hold his job, will spread to more states unless there is a successful assault on the right-to-work laws existing in 18 states. (In Louisiana, the law has been narrowed so as to protect only workers in certain agricultural industries.)

Right-to-work will be an issue next year in many state legislatures where labor will be fighting either to repeal present laws of this type or to prevent enactment of new ones.

If labor could win repeal of Section 14(b)—a single sentence—it could nullify present state right-to-work laws and smother any possibility of other states passing them.

Some in management seem inclined to leave right-to-work legislation to the wishes of individual states, in line with the principle of states' rights. Others will try to counter labor's repeal drive with a proposal for a national right-to-work law. This would put a nationwide ban on compulsory unionism and, as some view it, would be an effective way to protect workers who don't want to join unions from being forced to pay dues, part of which are used for political purposes of which they may disapprove.

In this connection, building trades unions are also making a hard fight to legalize pre-hire contracts in the construction industry.

The problem arises because employment in construction is usually casual, with contractors relying on unions to supply workers as needed. The National Labor Relations Board has been unable to arrange elections to determine collective bargaining rights on construction projects.

President Eisenhower proposes, as did Senator Taft, that the employer be permitted to enter into a pre-hire contract with a union under which the union would be treated initially as the employees' representative for collective bargaining, and that a union shop agreement be permitted under which an employee must join the union seven days after hiring, instead of having the right to wait 30 days. The President would also extend this privilege to the maritime and amusement industries.

There seems to be little employer objection to hiring concessions in casual employment industries. The trouble is, the unions feel these concessions aren't worth much if they are nullified by right-to-work laws.

Richard J. Gray, president of the AFL-CIO Building and Construction Trades Departments, contends that unionization of the building and construction industry has dropped from 82.5 per cent in 1946 to 56 per cent. Eighteen unions with a membership of 3,000,000 make up this AFL-CIO department. More than 3,000 delegates attended the second annual legislative conference conducted by the department in Washington last spring. Another will be held next March to stimulate a last-ditch fight for Taft-Hartley amendments.

Mr. Gray, one of the few top union officials who supported President Eisenhower for re-election, told NATION'S BUSINESS he suggested the joint committee approach to the President last June. He saw the President again shortly before the election. Building trades unionists are eager to isolate their Taft-Hartley demands from those of other unions; they feel their demands have stronger basis and a good chance of getting through if they don't get mixed up with others. Labor's other major goal is elimination of secondary boycott restrictions and, if that can't be done, elimination of the immediate, and mandatory, injunction as a weapon for coping with secondary boycott tactics.

The secondary boycott is a squeeze play on a neutral employer as a means to bring pressure on another employer against whom a union may have other grievance.

Recognizing the irreparable damage that can *(Continued on page 64)*

**FIRST
REVISION
STEP:**



Secretary Mitchell has set up labor-management committee to study amendments to meet construction industry problems

**THESE WAIT
THEIR TURN:**

Union
political
spending

Control of
welfare
funds

Non-Communist
affidavits

Secret
strike ballots

NAVY REJECTS \$7 MILLION SAVING

Civilian survey makes recommendations upsetting traditional training methods

A PLAN that could save at least 7 million tax dollars a year is being bypassed by the United States Navy.

Such a saving would be equal to all the federal taxes that approximately 26,600 average American families will pay this year.

The survey which recommends the cost-reduction change-over is classified and the Navy refuses to make it public.

The Navy's official position, in classifying the survey, is that it involves national security.

This has aroused some officials who say that the classification stamp in this case is merely a convenient means of avoiding adoption of the survey's recommendations.

The study involves the primary training of new fliers. The Navy spends a great deal more to train a new flier than the Air Force spends, and the report reveals that the Air Force primary training system is more efficient.

The Air Force provides primary flight training through privately operated contract schools.

The classified study concludes that it is not only feasible and practical for the Navy to do likewise but that a substantial saving could be achieved.

Not intended as purely a dollar comparison, the study also concludes that contract flight training is actually better than the present Navy program.

The Air Force, which now trains all its new pilots with civilian instructors, has graduated about 285,000 military aviators trained in this manner. The Army, after evaluating the Air Force contract plan, will switch to civilian teachers for helicopter and fixed wing pilot training in January.

In addition, college students in Air Force and Army Reserve Officers' Training Corps units at universities across the nation will be offered flight training this year for the first time. This training also will be handled by civilian instructors.

The Navy says it has no plans to provide ROTC flight training at universities.

Although \$7 million would appear to be a small saving when compared to total federal expenditures of almost \$70 billion anticipated for the year ending next June 30, it could help to make an impressive dent in the rising cost for the operation and maintenance of the U. S. military establishment.

Major national defense during the current fiscal year is expected to cost \$40.8 billion. That's about 60 per cent of all 1957 federal expenditures, and \$454 million higher than the Administration anticipated earlier.

All phases of naval flight training will cost the taxpayers about \$91 million this year, compared to \$87 million during fiscal 1956. Of that sum, the proportion which will go for training new fliers is a large question mark. It could be anywhere between \$40 million and \$55 million—depending on which source you ask.

► One official Pentagon source says: "The Navy's latest figure on the cost of the 18-month training program which leads to designation as a naval aviator is \$89,500 per student."

► Another says the figure is \$68,000.

► A third says the figure cannot be ascertained.

Comparable Air Force training averages \$40,000 per student, of which \$8,872 goes for the cost of primary training.

The Navy told NATION'S BUSINESS that it could not say what proportion of the total pilot cost is attributable to the primary phase.

Although it appears that the Navy could reduce its cost for training new pilots, some top naval officers are so thoroughly against the contract plan that the survey seemed doomed before it arrived in the Pentagon.

One high naval officer told NATION'S BUSINESS:

"I find it difficult even to talk about the matter. I'm so dead set

against the contract plan that I can't discuss it without emotion."

Even before the survey was completed, another high officer of the Navy expressed his opposition to the contract concept. He is Capt. R. E. Riera, chief of staff, Naval Air Training Command.

He told a news conference at Pensacola, Fla., where the Navy teaches primary flying:

"The Air Force was forced against its wishes to go into civilian flying school contracts for its primary training.

"We believe that our primary training is better than that of the Air Force. We believe also that there would not be a cost variation of as much as five per cent between the two systems."

Later, when the report—made by Robert Heller & Associates, of Cleveland—was delivered to the Pentagon, the Navy classified it. Although it was expected that the Navy soon would declassify the report, it has not done so.

The Navy told NATION'S BUSINESS:

"... it is apparent that cost studies conducted in the past are invalid and their release would serve no useful purpose."

The Navy also says:

"The study of costs of civilian contract training contains some inaccuracies since certain hidden costs were not considered."

The Navy does not identify hidden costs and does not explain why any costs should have been hidden from the Heller firm which it was paying \$40,000 for a survey.

The study served a useful purpose, the Navy continues, because "it pointed to certain areas of the Navy program where revisions have been made to effect economies."

"Because of advances in performance of aircraft and changes in composition of the naval operating forces, major revisions to the flight training program are in progress or planned for the near future. These

include a reduction in the time devoted to primary training and the introduction of a jet trainer into basic training.

"The Navy's decision not to adopt civilian contract training at this time stems primarily from the inherent advantage of using instructors who have recently returned from the operating forces to indoctrinate the young student aviator."

"This system," the Navy adds, "has produced the finest aviators in the world and the Navy considers it most unwise to shift to a different system."

Notwithstanding this official opposition, there appears to be some pressure to adopt the contract plan for the primary stage.

Advocates of the plan point not only to the dollar savings but to the proficiency of civilian flight instructors as specialists in the business of teaching flying. Proponents of contract schools say that the use of civilians would help release regular Navy personnel—as it does in the Air Force—to teach others the complex operations of new weapons systems, called by one high official the Navy's most serious problem.

Of more immediate importance, it would release Navy fliers from the job of elementary instruction to the job for which they were trained—flying with the fleet to maintain a state of combat readiness. It would release aviation mechanics from tending primary trainer planes to the job of taking care of operational aircraft.

Proponents of this view point to the need for more efficient use of armed forces manpower.

Opponents of contract instruction say only a Navy man can train a Navy man. *Esprit de corps*, high in the Navy, can be achieved—a high naval official says—only if a Navy-trained and fleet-experienced flier indoctrinates a fledgling.

They point to the safety record of the naval training program as an achievement of this system. One fatality is recorded for each 32,000 hours of flight training. (The Air Force safety record is approximately the same.)

Idea for the Heller study originated in the office of James H. Smith, Jr., then Assistant Secretary of the Navy (for Air), a post now held by Garrison Norton. Discussing contract training, Mr. Norton told NATION'S BUSINESS:

"I would be strongly in favor—in peacetime—of a completely in-house pilot training operation for the Navy. I believe this is the best policy when you have the time to use it." ("In-house" is Pentagon language)

(Continued on page 78)



What's
different
about
these two
pictures?

*They both involve primary
training of new fliers
in similar aircraft*

BUT...

*The Navy ↑ method of training
is more costly than
the Air Force ↓ system*



COMING: new U.S. atom program

Will government provide indemnity against nuclear accidents? Monopolize reactor development? Here's what to expect in 1957

THE STAGE is set for decisive action on the atom in the 85th Congress.

Shaping up are new laws which have top significance for both the expanding atomic industry and businessmen generally.

Involved in upcoming measures are such basic political issues as public vs. private power, states' rights, government's role in promoting new industry, inflated federal spending.

Positive action on atomic problems with overtones in these areas is widely expected for the overriding reason that the peaceful atom is up against barriers that only new legislation can knock down.

Businessmen will thus find themselves involved in extensive congressional hearings on the atom, beginning in early 1957 and running intermittently through the session.

The 18-member Joint Committee on Atomic Energy

will take up a number of bills which bogged down in the past session and which already are slated for reintroduction. Some of the pressing questions members will try to answer:

- Should atomic power development be speeded up?
- Will government provide indemnity against reactor accidents?
- Will firms cooperating in research be exempted from regulations imposed on utilities?
- What can be done about manpower shortages? Restrictions on information?
- How serious is radiation as a job hazard?
- Should states or Washington handle health and safety regulation?

Some answers are already evident. Retention of control of Congress by Democrats foreshadows in

for civilian development

LEWIS L. STRAUSS, AEC Chairman,
thinks business should develop
atomic electricity production



particular an acceleration of the nation's reactor development program and a thorough airing of radiation hazards and H-bomb testing. However, the narrow margin of victory, combined with President Eisenhower's re-election, means that final measures will have to reflect Administration views or run the risk of a White House veto.

The outlines of action on major subjects:

Atomic power. The reactor controversy is the hottest atomic topic the new Congress will handle. At issue is the entire present program of developing atomic plants for electric power production. As carried on under the Eisenhower Administration, the program takes this tack:

Government conducts in its own laboratories the basic research and testing on various reactors—the furnaces where atoms are split in a chain reaction to produce intense heat. As promising types are advanced beyond the experimental stage, private industry is offered the chance to build the large prototype plants needed to prove out the designs.

If industry did not respond—something that so far has not occurred—the Atomic Energy Commission would ask Congress for extra funds and build a prototype itself.

This approach is backed by business as offering the best hope that civilians rather than government may ultimately preside over atomic electricity production. Its staunchest advocate is Lewis L. Strauss, chairman of the AEC. A reserve rear admiral and former investment banker, Mr. Strauss has long been involved in a running battle with congressional Democrats on the adequacy of the present program. This is the heart of the issue:

Is the AEC-directed program moving ahead fast enough and in enough different directions to assure earliest possible realization of competitive power from the atom and global U.S. supremacy in peaceful atomics?

The past campaign indicates how sharply the lines can be drawn on this question. Yet responsible officials in both industry and government believe that, with the elections now behind, an in-between area of compromise can be worked out. The dispute's record shows how this will shape up.

Opposition to the present program found its most pointed expression in the bill introduced in July, 1955, by Sen. Albert Gore (D-Tenn.), a vocal member in the

Joint Atomic Committee. It called for a crash program of government reactor building. Six full-scale atomic plants for generating electricity would have been built across the nation.

Last May the Joint Committee held five days of hearings on this measure and heard 44 witnesses. A flurry of protests was raised that Senator Gore's plan:

- Would involve vast new federal spending for a duplication of present and planned efforts.
- Would disperse already-scarce atomic technicians too thinly over too many projects.
- Is unnecessary since the major need is not for plants based on present primitive designs but for research leading to designs with construction and operating costs comparable to low-cost coal plants.
- Private utilities expressed the fear that an accelerated federal reactor program would pave the way for an enlarged government role in electric power. A coal industry official characterized it as "a leftist, socialist, collectivist, asinine proposition."

On the other hand, even temperate critics of present development assert that:

- Government should not expect private enterprise to shoulder the heavy losses necessary to advance the low level of the atomic art.
- Giving industry primary responsibility results unavoidably in a cautious approach, a time lag in getting reactors underway.
- AEC is failing to exploit promising reactor concepts.

Members of the Atomic Committee weighed the two points of view in a series of private sessions last June. Discussions were steered by Chairman Clinton P. Anderson, moderate Democratic senator from New Mexico. The group found that even the status of reactor development is in dispute.

According to Mr. Strauss, 82 reactors have been built in this country, and 127 more are either under construction or planned.

"In terms of strictly civilian atomic power," he stated recently, "our program includes 30 reactors in operation in the United States, under construction or planned, for experimental or for actual full-scale use. Eighteen of these 30 plants will provide civilian commercial power for homes and industries, beginning

(Continued on page 89)



for government action

SEN. ALBERT GORE backs program for federal government to build its own full-scale reactors

LOCAL DOLLARS CUT SCHOOL SHORTAGE

Advocates of federal intervention in education plan record push in next Congress. Here are facts

THE 300,000th public school classroom built since the 1952-53 school year will open sometime in 1957.

To reach that mark, America's communities will erect more classrooms than have ever been built in a single year.

Yet in the same year you'll see the most powerful drive ever made to push the federal government into the school-building business.

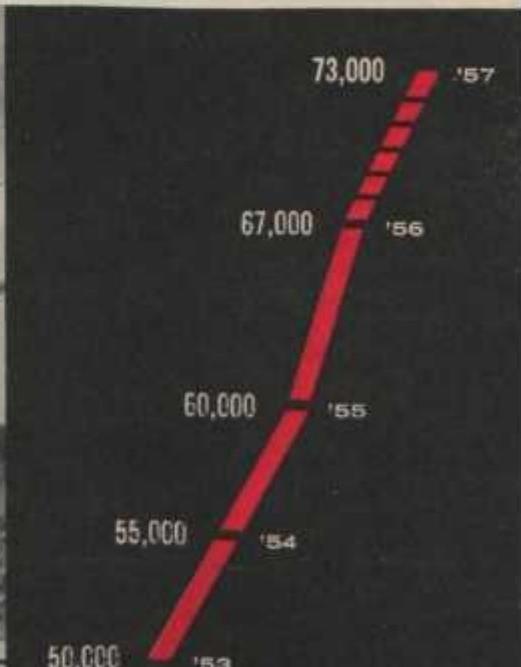
Numerous proposals will be made soon after the 85th Congress meets in January. Bills are being shaped up now.

You can expect proposals for the federal government to spend between \$1.3 billion and \$2 billion for local school construction in the coming four years.

Proposals also will include authorization for federal purchase of local school bonds which cannot be marketed at "reasonable interest rates." There'll be a top limit for this fund, probably about \$750 million to start. Other features of the program will involve federal money for long-term building projects.

Whatever the amount for construction, the proposals will differ in one significant way: how to distribute the money.

One proposal, for example, will require high-income states to put up



MORE classrooms were built in the past 4 years than in all the preceding 12 years

\$2 for every federal dollar, while low-income states may match each federal dollar with as little as 50 cents. States may also be required to show progress toward removing restrictive tax and debt limits on local governments and toward more efficient reorganization of school districts.

Another proposal would pass out federal money on a dollar matching basis according to the number of school-age children (5 to 17) in each state.

These proposals would control local expenditures in such ways as requiring acceptable principles for priority of local projects, federal standards for construction, and wage and hour standards for workers.

Both political parties expect to press hard for a federal school construction law to be passed in 1957 if possible.

Meanwhile, America's local school districts are not waiting for federal intervention.

New construction expenditures for public school systems are expected to reach or even surpass \$2.8 billion in the year ahead—up 70 per cent in five years. Additional construction for private and parochial schools will exceed \$550 million, up from \$351 million in 1952.

Significantly, today's expenditure for public education buildings is 19.4 per cent of total public expenditures for all new construction. The figure in 1952 was only 14.7 per cent of total new public construction.

Here's how the school construction figure has been rising:

- \$1.6 billion in 1952.
- \$1.7 billion in 1953.
- \$2.1 billion in 1954.
- \$2.4 billion in 1955.
- \$2.6 billion in 1956.

Local school systems built more than 67,000 new classrooms in the past year.

In the coming year the number will probably exceed 73,000.

The figure for 1954-55 was 60,000, compared to 55,000 for 1953-54 and 50,000 for 1952-53. More classrooms have been built in the past four years than in the preceding 12.

The U.S. Office of Education says that a survey covering public elementary and secondary schools, including kindergartens and junior high schools, indicates overcrowding in classrooms has been reduced by about 10 per cent for the nation as a whole this year.

Increasing local interest in public school construction is indicated in the ratio between building costs and operating expenses. For every \$1 being spent for current operating expenses, another 36 cents is being

(Continued on page 88)

WASHINGTON

NOW SPENDS \$1.6 BILLION FOR EDUCATION

THE FEDERAL government's annual bill for support of 81 educational programs totals more than \$1.6 billion.

For school construction in federally affected areas, the bill is around \$122.8 million.

An additional \$85.3 million of federal money goes for maintenance and operation of public schools in federally affected areas.

"The affected areas include districts in which federal ownership of property has reduced taxable valuations appreciably, or federal activities have caused burdensome school enrollments through the influx of workers and their families," the U. S. Office of Education explains. The new biennial report, for school year 1954-55, has just been compiled by the government.

The \$1.6 billion compares to \$3.5 billion for 1948-49. However, the earlier sum includes more than \$2.7 billion for veterans' education and training. The 1955 amount is \$669.3 million.

Other federal expenditures for education include:

\$169.5 million—school lunch programs.

\$132.2 million—surplus personal property allocated to educational and health institutions.

\$40.6 million—agricultural extension service.

\$34.6 million—education of U. S. Indians.

\$24.8 million—vocational rehabilitation programs.

The government also supported education for children of overseas military personnel, native children in Alaska, Pribilof Islands, Virgin Islands, and children of employees of national parks.

Additional sums are spent for educational exchange programs with other nations, educational missions in foreign countries, off-duty education of military personnel, land-grant colleges, vocational education, veterans' vocational rehabilitation, atomic research, aviation education, educational programs in penal and correctional institutions, industrial apprenticeship training, and fellowships in scientific fields.

The Office of Education says: "Programs receiving federal support are those considered essential or beneficial to national welfare and security, or which carry federal responsibility. They are administered by various federal departments and agencies."

Transportation faces new era

**Peacetime peak reached in '56
but special events will have
biggest impact in the future**



\$20 billion for new plant and equipment



intercity travel will double



118 million domestic passengers

WE ARE in a new era of transportation.

Nineteen fifty-seven will be another record year for both passengers and freight—with new high levels of capital investment and innovation.

Here is what the experts say:

- The Railway Progress Institute sees a 41 per cent increase in railroad freight in the next 10 years.
- James M. Symes, president of the Pennsylvania Railroad, thinks that the railroad industry will have to spend \$20 billion for new plant and equipment over the next decade if it hopes to keep pace with economic growth.
- Arthur S. Genet, president of Greyhound Corporation, looks for a doubling of intercity bus travel by 1965 as the new federal highway program brings the main roads of America up to date.
- Civil Aeronautics Administrator J. T. Pyle is figuring on 118 million domestic air passengers by 1970—nearly triple the present volume of business.
- The Bureau of Public Roads is preparing for 81 million motor vehicles by 1965—16 million more in the next nine years.

The impact of these predictions is already being reflected in the high rates of new investment and the rapid introduction of innovations that will make 1956—when the final count is in—the biggest year so far in U. S. transportation.

By year's end the railroads will hit a peacetime peak of nearly two thirds of a trillion ton-miles—five per cent above the record set last year.

Inland waterway traffic is breaking all previous marks as increasing shipments of petroleum, coal and wheat have boosted 64 rivers and canals into the one-billion-tonns-a-year class.

Pipeline traffic is up 10 per cent over last year's top performance.

The big intercity trucking firms are driving toward new tonnage records with an eight per cent increase over 1955.

Motor vehicle registrations continued their long-term increase this year. By late December, 65 million vehicles will be on the road—four per cent above last year. This has been accomplished in spite of a 25 per cent drop in auto sales from the 1955 high. Registrations this year include 54 million passenger cars and 11 million trucks and buses. Twenty-five states now have more than a million vehicles each.

The airlines will show a 15 per cent increase in patronage for the year. Approximately 22 billion pas-

senger-miles of domestic flying in 1956 will outdistance intercity buses by a good 4 billion passenger-miles. Domestic air travel is close on the heels of railroad coach and Pullman travel combined. But local service airlines and international air travel set the pace in 1956, with traffic up 20 to 25 per cent from the year before.

The 1956 traffic figures are big, but special events in the transportation field this year will have their biggest impact in the future. They have set the stage for developments that will revolutionize the U.S. transportation system.

Here are some of the milestones that were passed by the fast-moving transport industry in 1956:

In St. Charles County, Missouri, the first interstate expressway project in the new 41,000-mile roadbuilding program got under way. This was the beginning of the biggest highway construction job ever undertaken. It will cut a \$27-billion slice through congestion, coast to coast. New highway construction during 1956 reached a record rate of \$5.5 billion per year, \$2 billion above the 1951-1955 average.

Emphasis in the new road program has been directed to America's urbanized areas, where congestion has reached the most critical dimensions. Part of the problem is parking, and efforts to solve it in 1956 boosted private investment in lots and garages past the \$4 billion mark.

In 1956 the largest federal-aid airport improvement program ever undertaken began setting the stage for the fast-approaching age of commercial jets. Emphasis is on longer runways and clear approaches. Projects involving \$1,250,000 in airport improvements were approved for Atlanta, Chicago, Los Angeles, Miami, Minneapolis-St. Paul, New Orleans, New York International and Oakland.

A record five-year federal airways program to provide radar and other electronic aids to air navigation and safety has been telescoped into three years. Commercial jets of the future are being put through their paces for the Civil Aeronautics Administration at speeds up to 585 miles per hour at 35,000 feet.

The railroads will be winding up the year with the second greatest capital outlay on record—a 44 per cent increase in expenditures over 1955. Two thirds of the \$1.3 billion investment is going for equipment—freight cars, locomotives, and new experimental lightweight passenger trains designed to cut time and operating costs.

The year saw a parade of low-slung railroad beauties on trial runs

AUTO OUTLOOK BRIGHT

A bright future, based on general economic prospects which should indicate a favorable outlook for most business, is forecast for the automobile industry. The look ahead is provided by Lehman Brothers, New York investment house, in a study of the Ford Motor Company and the market for autos in general. The analysis, "The Future at Ford," says that by 1965 it is expected that:

- Average annual car sales will go up 40 per cent to about 8.5 million as standard volume, with possible peaks of 9.5 or 10 million. For the next few years, expected annual average is 6 million.
- The number of cars on the road will increase from 47 million to 67 million.
- Spending for new cars will increase from \$19 billion to \$26 billion in today's dollars.
- About 12 million families, or approximately one in five, will own two or more cars.

to test their favor with the public. Up before the judges were G.M.'s Aerotrain, Pullman's Train X, and Budd's tubular Hot Rod. Rail passenger travel was holding its own during the year, and railroad management was in the mood to lop off the uneconomic runs and bolster the service that might some day make money.

The railroad revival has been spreading to all segments of the industry. The Burlington Zephyr introduced its new Slumbercoaches in 1956 to give the neglected night coach traveler a bed and privacy for the first time in coach travel history. Taking a tip from the airlines, the Twentieth Century Limited replaced its male secretaries with young women. And at New York's Pennsylvania Station 100 TV cameras and 96 receiving sets were being installed for transmitting information on space availability and assignment, to make it easier to ride the railroads.

News of the year from the railroads, however, was the signing of a construction contract by the Denver and Rio Grande and the Baldwin-Lima-Hamilton Corporation for the first mobile nuclear reactor power plant for a railroad locomotive.

"The locomotive that is now being planned," according to experts working on the project, "should run for a year or two without even being looked at."

Things also have been happening on the water.

In 1956 the greatest peacetime shipbuilding program ever launched

was under way with \$500 million of new work ready to go. The Maritime Administration was putting gas turbine power plants in old Liberty ships and doubling their speed. Builders were talking about new supertankers of 100,000 tons—four times the supertankers of only a few years ago.

A congressional appropriation of \$42.5 million was approved to start work on the world's first nuclear-powered merchant vessel. Plans call for a combination cargo-passenger ship 595 feet long with a cruising speed of 21 knots.

The Atomic Energy Commission holds that the prospects are good for an economically successful application of nuclear energy for ocean-going ships. Larger cargo could be carried because of the lighter weight and smaller size of the nuclear power plant. Such ships would be able to travel greater distances at higher speeds, their turn-around time would be reduced by the elimination of refueling and more flexible world shipping routes would be possible.

What do these technological developments and traffic records of 1956 mean for U.S. transportation in 1957 and beyond?

Here are some facts:

During the past 15 years the transportation system has been called upon to move between three and 3.6 tons of freight one mile for every \$1 of gross national product—in constant prices. As G.N.P.

(Continued on page 51)

1957:

EXCLUSIVE SURVEY

Management's plans

Special study shows which industries expect 1957 to produce the greatest sales gains, higher prices, increased employment

LOOK FOR the nation's economy to soar to new record levels in 1957.

That's the view of top executives in pace-setting industries all over America.

To get a cross-section of business thinking on our economic prospects for the next 12 months, NATION'S BUSINESS surveyed executives of leading companies in all fields of activity and all sections of the country.

The survey shows how business leaders evaluate the outlook for general business in 1957—the basis on which business is making its plans—and how these key men assess the prospects for their own industries over the next five years.

Here are some of the findings:

- An overwhelming majority expect conditions in their industries over the next year to be better than in 1956.
- Eighty-seven per cent look for higher sales.
- Sixty per cent expect to employ more workers in 1957 than in 1956.
- Ninety-two per cent say their firms will spend to expand productive capacity next year.
- More than 70 per cent expect their industries to increase their volume more than 10 per cent over the period 1957 through 1961.

Only two of the businessmen say they expect conditions in their in-

dustries to be less favorable in 1957. Only one sees sales of his firm declining in the year ahead.

The survey also shows what businessmen expect with respect to the price of their products or services, their labor and other costs, their plans for spending for research and development, and the effect of the government's tight money policy on their plans for expansion in 1957.

The business leaders participating in the survey were asked ten questions. A summary of their replies follows:

Outlook

Seventy per cent of the executives taking part indicate that they expect conditions in their industries to be better in 1957. Twenty-nine per cent say conditions will be about the same. Only one per cent believes conditions will not be as good as this year. Note: Figures used do not always total 100 per cent because in some instances executives replying said questions did not apply to their particular operation.

Among those who expect conditions to be better in 1957 than in 1956 are men in business machine manufacturing, railroading, electrical wholesaling, container manufacturing, insurance and bus transportation.

Executives who expect about the

same conditions next year include a number in department store retailing, chain foods, engineering construction and drug manufacturing.

Executives who say they look for conditions in their industry to be not as good as in 1956 are in commercial banking and mining.

Gross national product, the measure of all the nation's production of goods and services, now averages an annual rate of about \$414 billion compared to \$390.9 billion for 1955.

Personal income is running at the annual rate of \$328.5 billion, with the average so far this year about \$322.5 billion. The 1955 income figure was \$306.1 billion.

Sales

Eighty-seven per cent expect sales to increase in 1957. Expected increases range from three per cent to 20 per cent.

Of those who specified what increase they expect, one fourth expect an increase of 10 per cent or more, half expect an increase of eight per cent or more, three fourths expect an increase of five per cent or more.

Twelve per cent say they expect their sales level to remain about the same.

One businessman, the treasurer of a mining company, says that he expects his firm's sales to decrease by 10 per cent in 1957.

Among those who expect their sales to increase are officials of companies in container manufacturing, drug manufacturing, publishing and printing, air transportation, variety chain operation, hotels and restaurants, chain foods, mining and manufacturing, retail drugs, and petroleum distribution.

Executives who expect their sales to remain constant are in steel products fabrication, general construction, railroad transportation, textiles and other fields.

Retail sales have been averaging approximately \$16 billion a month this year, but are expected to reach about \$20 billion during December for a total of about \$195 billion for the year.

That compares with 1955 retail sales of \$186 billion.

Jobs

Sixty per cent say they expect their companies to employ more workers next year. The expected increases range from one to 20 per cent. Of those who specify what their own increase will be, 18 per cent look for an increase of 10 per cent or more, 58 per cent expect an increase of five per cent or more, and 75 per cent expect an increase of three per cent or more.

Forty per cent expect the level of their employment to remain about the same.

Expected employment increases are in the fields of construction, mining, nonferrous-metal production, railroading, steel production and beverage making.

Executives in life insurance, electric utility, metal fabricating and several other types of companies say they expect their employment level to remain at about the 1956 level.

No executive expects a decrease in employment.

Productive capacity

Ninety-two per cent say their companies will spend to expand productive capacity in 1957, a significant fact since spending for new plant and equipment this year set a new all-time record of about \$35 billion.

Eight per cent say their firms will spend nothing to expand next year and two per cent indicate that they do not consider the question applicable to their companies.

Executives whose companies will expand productive capacity include a number in steamship transportation, chemicals, railroading, food products, textiles, automobile manufacturing, and aircraft manufacturing industry.

Those who do not expect to expand are in department store retailing, shaving products and construction.

Tight money

Eighty-three per cent say the tight money policy will have no effect on their plans for expansion over the coming 12 months.

Thirteen per cent say that tight money will cause them to cut back the size of their planned expansion expenditures.

Two per cent say the policy will have little effect on them; one executive indicated the government's policy would have some unspecified

effect on his company's expansion plans. Executives who do not expect tight money to affect their companies' expansion plans are in a wide variety of fields, including metal fabrication, chemical manufacturing, public utilities, publishing, retailing and air transportation.

Those who say tight money will force them to cut planned outlays for expansion include officials in chemicals, nonferrous-metals production, construction, chain retailing and petroleum.

Prices

Fifty-six per cent say the price of their products or services will rise

CHEMICAL CONCERN *economist*
says his company will expand
in '57, but says: "Tight money will
affect some of our customers."

A RAILWAY
EQUIPMENT *president*
expects employment in his
company to increase
but adds: "An increase
depends on availability
of steel."

MANAGEMENT

continued

in 1957. The expected increases range from one to 15 per cent, although some of those taking part preferred not to set a definite figure. Of those who estimated the rise, one fourth expect an increase of five per cent or more; half expect an increase of four per cent or greater and three fourths expect an increase of two per cent or more.

Forty-four per cent say they look for their price level to remain about the same.

Among executives who expect their prices to rise are officers of companies in mining, railroad transportation, retailing, steel products fabrication, chemicals, publishing, construction, textiles and other lines.

Those who expect their prices to remain about the same are in electric power, electrical appliances, life insurance and wholesale foods, and other fields.

Labor costs

Ninety-five per cent say their labor costs will rise in the coming year. The expected range is from one to 15 per cent.

Of those who give a specific per cent of increase, one fourth expect an increase of seven per cent or more, half expect an increase of five per cent or more, while three fourths expect an increase of three per cent or more.

None say they expect their labor or unit costs to drop.

Five per cent say they expect the level of their labor costs to remain about the same.

Increases are anticipated in a wide variety of fields, including publishing, petroleum, retailing, rail transportation, mining and wholesale food distribution.

Those expecting their labor costs to remain about the same are in soap and toilet goods, bus transportation, food distribution and other fields.

Other costs

Eighty-seven per cent of the respondents say they expect materials and other costs to increase in 1957.

None expects a decline.

Thirteen per cent expect these costs to remain about the same.

Among those who expect their costs to rise next year are executives in manufacturing, natural gas distribution, food store operation, baking, and engineering and construction.

Among those who expect no rise are executives in variety retailing, bus transportation, hotel and restaur-

rant operation, and wholesale food distribution.

Research and development

Fifty-three per cent say their companies will spend more for research and development in 1957 than they did this year.

Total spending for research and development in the United States now exceeds \$5 billion annually.

Thirty-three per cent of the respondents say they will spend the same as this year. Fourteen per cent explained that this question does not apply to their operations.

Increased spending for research and development is planned in electrical power production, publishing, chemical manufacturing, wholesale food distribution, mining, air transportation, and numerous other fields.

The same level of expenditures as 1956 is expected by executives in fields including railroading, general merchandising, retail drugs and textiles.

Five-year prospects

Twenty-five per cent say they expect the volume of their industries to increase from 16 to 20 per cent over the next five years. Eighteen per cent look for an increase ranging from 11 to 15 per cent. Eighteen per cent expect the increase to be 31 per cent or more. Sixteen per cent expect it to be from six to 10 per cent; 13 from 21 to 30 per cent, five from one to five per cent.

Several explained that their operations are too diversified to permit a precise answer.

The most optimistic companies—those which anticipate a volume increase of 31 per cent or more over the next five years—are in power generation and supply, electrical equipment manufacturing and wholesaling, air transportation, life insurance, chemicals, heavy manufacture, motor freight, and wholesale food.

The most conservative group—those who look for a volume rise of from one to five per cent—is comprised of companies in variety merchandise, transportation, international shipping, textiles, and building.

(Executives who participated in the survey did so in the understanding that their names and the names of their companies would not be used in publication of the poll results.)

Those who desired to add comment were invited to do so.

One railway equipment company executive notes, in answering the question on employment, that "increase in our employment depends

on availability of steel." He adds: "Scarcity today is holding present production to only 60 per cent of capacity."

The general manager of a construction and general contracting organization observed, "tight money will cut the building program of our customers."

An economist for a chemical concern had this to say on the same subject:

"While we do not expect to have our own expansion plans directly affected by tight money, we expect that it will affect some of our customers and therefore will surely have an indirect effect on our future expansion and activities."

The survey participants, in the main, were selected on the basis of their industry's contribution to the gross national product, or total of goods and services produced in a given period, in this case one year.

The groups covered by the survey include wholesale and retail manu-

What
executives
expect

facturers of trade, food and kindred products, textiles, apparel, lumber and wood products, printing and publishing, chemicals, primary metal, fabricated metal products, machinery (except electrical), electrical machinery, transportation equipment, mining, finance and insurance, transportation, communication, and public utilities, services (hotels, radio and TV networks, etc.) and contract construction.

Companies within these groups were selected on the basis of such factors as total assets, sales and number of persons employed. In each instance the individual executive contacted is a subscriber to NATION'S BUSINESS.

Of the more than 100 executives taking part, 49 are presidents. Others include vice presidents, treasurers, comptrollers, company economists.

The responses came from 21 states and the District of Columbia. The state distribution covered the major geographical areas.

END



**NO
CHANGE**

Do you expect conditions
in your industry to be...

BETTER

70%

SAME

29%

NOT AS GOOD

1%

Do you expect sales
of your company to...

INCREASE

87%

SAME

12%

DECREASE

1%

Do you expect employment
in your company to...

INCREASE

60%

SAME

40%

DECREASE

0%

Will your company
spend to expand
productive capacity

YES

92%

NO

8%

What effect will tight
money have on your plans
for expansion

NO EFFECT

83%

CUT BACK

13%

Will the price of your
products or services...

RISE

56%

SAME

44%

DECLINE

0%

Will your labor costs...

RISE

95%

SAME

5%

DECLINE

0%

Will your other costs

RISE

87%

SAME

13%

DECLINE

0%

Will your company
spend for research
and development

MORE

53%

SAME

33%

LESS

0%

Do you expect your industry
over the next five years
to increase its volume by...

1-5%

— 5 per cent

16-20%

— 25 per cent

6-10%

— 16 per cent

21-30%

— 13 per cent

11-15%

— 18 per cent

31% or more

— 18 per cent

1957:

CONGRESS ADVISER'S VIEW

Changes in government monetary and tax policies should reflect general economic conditions

LONG-TERM growth trends would call for gross national production of about \$420 billion in 1957, expressed in 1956 prices. Achievement of this volume of production would represent a good year for American business. This figure may be compared with total production of about \$412 billion this year when the general economic tempo averaged slightly above the long-run growth trend.

Will the estimate for 1957 be achieved or exceeded?

The revolt of the satellite countries against Soviet rule and the situation in the Middle East could mean some readjustments in East-West economic relations and in our economic policies.

Although the effects of these readjustments cannot be fully assessed as yet, a study of the situation as it appears now will be helpful in anticipating the impact of whatever changes may occur.

Most analysts expect business to continue to expand well into 1957. Even if the economy leveled off later in the year, 1957 as a whole would still average somewhat above the long-run trend since the year starts above trend.

These computations assume stable prices. But prices have continued to rise throughout 1956. Businessmen and economists expect prices to rise still further in 1957. If the rate of price rise approximates in 1957 that of the past year, gross national product in current dollars might range between \$430 and \$440 billion. The exact total would depend on the extent to which the economy stays above the long-run growth trend and the amount of the price rise.

Several factors point toward the further real expansion implied in the above figures.

1. Total government expenditures for goods and services apparently will rise again in 1957. A continuation of the recent rate of rise in state and local outlays would result in \$3 billion of additional spending in 1957 compared to 1956. Also federal spending for current production may rise by \$1 billion to \$2 billion above calendar 1956. Much of this rise of \$4 to \$5 billion in government expenditures results from price increases which have already taken place.
2. The trend of consumer demand continues upward. In 1956 consumers will spend about four per cent more than in 1955, in spite of sharply lower auto-

mobile purchases. Of this rise in dollar spending, perhaps one half reflects higher prices and about one half greater volume. If this trend in spending for consumer nondurables and services continues in 1957 these expenditures could rise above 1956 by between \$5 and \$8 billion. If the new automobile models prove more attractive to customers than last year's models another \$1 to \$3 billion might be added to consumer spending in 1957.

3. Demand for producers' goods apparently continues strong. Various surveys of business plans for plant and equipment expenditures available to mid-November indicate continued rising business spending during the final quarter of 1956 and for 1957. During December, more about business capital budgets for 1957 should become known from government and private surveys now being taken.

4. Although data on inventory trends are inadequate, the information one is able to piece together suggests that this important factor is not likely to become a depressing force in the immediate months ahead. Even the farm outlook appears more favorable as compared with any time in the past several years. Farm income may be fractionally higher in 1957 as compared with 1956.

This is the general picture. Some other factors may affect individual industries.

1. Private surveys of business capital expenditures indicate a steady growth in industrial capacity. This growth in capacity has been at a rate greater than the increase in actual production. Such a tendency for capacity to outrun production could well mean temporary excess capacity and a leveling off or decrease in capital outlays until population and consumer demand catch up, as all long-run projections indicate they will.
2. Profits have shown little buoyancy since the beginning of this year. At the same time, long-term interest rates have been rising. A combination of a tight supply of investment funds, stability of profits and rapidly rising costs of new capital goods could lead to a decline in business expenditures on new plant and equipment. These factors are undoubtedly affecting small business more than large firms.
3. Though construction spending this year will total about three per cent above 1955, construction costs

have increased about five per cent, so that the real volume of construction put in place will be about two per cent lower this year than last. Contract awards seem now to point toward only moderate increases in the dollar value of construction in 1957. Construction costs are still rising. In 1957, the dollar volume of construction may go up slightly, but rising costs and other factors could cause the real volume to continue downward, perhaps even more than assumed above.

4. The October consumer survey by the Survey Research Center of the University of Michigan indicates that, although consumers feel generally good about the economic outlook, they are not as enthusiastic as previously. Attitudes toward buying of durable goods also were not as favorable as in previous surveys. This might indicate that the increase in consumer demand in 1957 might be toward the lower end of the range of possibilities rather than the higher.

5. Prices seem destined to continue to rise. Wholesale prices recently have been about three per cent higher than a year earlier, with finished goods increasing slightly more than the average, and crude materials slightly less than the average. Among the finished goods, although the total year-to-year rise is something more than three per cent, foods went up between one and two per cent; other nondurables went up about two per cent; and durable goods increased between three and four per cent. On the other hand, producers' goods have risen about seven per cent. Consumer prices in 1956 have averaged about two per cent above 1955. Most economic projections anticipate similar rises in 1957—that is, a general average rise between two and three per cent. The recent expansionary and inflationary trends in this country have been paralleled by inflation abroad—particularly in Western Europe. These inflationary trends could be disturbing to future economic health.

Summing up, one would expect a moderate rise in real output in 1957 from current levels, and a continued moderate rise in prices.

So far, this analysis of the economic outlook has not referred to possible changes in federal monetary or tax policies. This is an appropriate time to stress again the principle that government monetary and tax stabilization policies should reflect general economic conditions rather than the reverse. If the economy continues booming and inflationary as it has this fall, wise monetary and tax policies would lean toward restraint as they have during the past year. This would mean controlling the general expansion of credit and holding present tax rates—applying the emerging budget surpluses on the national debt. These general policies would not necessarily rule out selective credit and tax measures to provide balanced economic growth.

On the other hand, if unemployment starts to rise, while production and prices begin to fall, monetary authorities should move toward easier credit and the tax structure should be adjusted to encourage economic expansion. The direction which tax policy should take will be clearer by the end of March, 1957, when present corporate income and excise tax rates are scheduled to be reduced under present law. Crucial questions will concern the nature of a tax bill at that time. For example, if a downturn or definite leveling off should develop which clearly results from temporary excess

capacity, then tax changes presumably should aim at stimulating consumption.

Some analysts have read into the current situation and outlook another problem which neither monetary nor fiscal policy is well equipped to help solve. This is the cost-price-push condition where prices and unemployment may be rising at the same time. Economic theory generally says that such a circumstance cannot prevail for more than a short period and must, in effect, be self-correcting. If such a correction were to occur, however, it is important that monetary and fiscal policies be so directed as to prevent the economy from spiralling downward.

The analysis of the economic outlook assumes that there will be no significant change in our military efforts as a result of changes in the international situation. Recent developments could have serious inflationary implications either because of interruption to supplies of raw materials from abroad or increased military spending at home and abroad. If events move in this direction, clearly economic policy should be adapted to these changed circumstances, particularly in the field of monetary and fiscal policy.

END

Dr. Grover W. Ensley

is Executive Director of the Joint Economic Committee of Congress. The views he expresses are his own and do not necessarily represent the views of the Joint Economic Committee or individual congressmen



GENERAL TREND:

Four factors point to real expansion



INDIVIDUAL INDUSTRIES:

Will consider five factors to determine their place in overall pattern

1957:

AFL-CIO VIEWPOINT

It reveals organized labor's political aims
as it forecasts a continuing rise in output

THE NATIONAL LEVEL of output in the coming months will probably be about the same as in the final quarter of 1956, or slightly higher—barring, of course, the outbreak of large-scale warfare, in which case the whole picture will change.

The year now closing has proved to be one of generally prosperous conditions. Underlying the nation's over-all prosperity, however, have been a number of divergent trends.

Business investment in new plant and equipment has been booming, while weaknesses have persisted in many consumer lines—home-building and hard-goods, in particular—and in farm implements.

Unemployment has not been a national problem in 1956, but there was large-scale unemployment in automobile production centers during several months. With about 3.8 per cent of the civilian labor force unemployed over the year as a whole, it is clear that the national economy has been operating below the relative levels achieved in five of the 10 post-World War II years, 1947-1948 and 1951-1953, when a smaller proportion of the civilian labor force was unemployed. The number of unemployed persons declined toward the end of the year, although temporary layoffs occurred in industries that were attempting to reduce inventories. Large-scale unemployment continues to persist in localities of chronic economic distress, such as the hard-coal centers of eastern Pennsylvania and the old textile towns of New England.

The nation's output of goods and services in this final quarter of 1956, based on available information for the first nine months and foreseeable trends, is approximately four per cent or so above the output level of the same period last year. After adjusting for price changes, the increase is only about one per cent in the real volume of production between the final quarters of 1955 and 1956. Despite the business investment boom, the over-all level of output moved sideways during most of the year.

The level of national output achieved in the final months of 1956 should carry over into the first half of 1957, with the possibility of a continuing small rise.

With a growing labor force and improving productive efficiency, however, expanding output is required to prevent an increasing number of jobless persons.

The key to output and employment levels in 1957 will be consumer activities. Will home-building revive from its slump of the past year and a half? Will auto sales bounce back from their 1956 decline? Will consumer spending rise sufficiently to sustain continuing high levels of plant and equipment expenditures?

The maintenance of economic health and high levels of employment requires balanced growth—an adequate balance between the economy's ability to produce and its ability to consume. In 1956 the economy's growth has been unbalanced to a marked degree.

	Business expenditures for new plant and equipment*	Consumer expenditures for durable goods*	Residential construction*
3rd QUARTER, 1956	\$38.0 billion	\$33.0 billion	\$15.4 billion
3rd QUARTER, 1955	31.5 billion + 21%	37.2 billion - 11%	17.2 billion - 10%

*Yearly rates, seasonally adjusted

The sharp rise in capital investment has already created difficulties—pressures in the money market which the Federal Reserve Board has attacked by increasing interest rates, aimed at slowing down the rate of over-all economic expansion. Continuation of the unbalanced condition between capital investment and consumer activities, combined with the tight money "cure," may well lead to difficulties in the latter part of 1957 or 1958. Businessmen will not long sustain their recent high levels of capital investment even with Eisenhower-Humphrey tax incentives, if consumer markets fail to expand sufficiently.

Unfortunately, the Administration and the Federal Reserve Board have failed to diagnose the current situation. The "tight-money," high-interest rate policy has added to the costs of small businessmen, farmers, and consumers, rather than slowing down the expansion and modernization programs of large corporations, where the real boom exists. The rate of over-all economic expansion has been small indeed—only about

one per cent in the past year—and it certainly has not required a halter.

A continuing rise in capital investment is required in an expanding economy. But a 21 per cent rise in business expenditures for new plant and equipment, in one year, cannot be explained by normal considerations, especially in an environment of declining home-building and relatively soft markets for automobiles and many other consumer goods. Part of the answer for this capital investment boom, and the growing lack of balance between investment and consumption, can probably be found in tax policy—the Eisenhower-Humphrey tax revisions of 1954 and the five-year depreciation of supposedly defense-related facilities, adopted after the Korean outbreak.

With the early termination of much of the five-year write-offs, granted in 1951 and 1952, many large corporations are now seeking new plant and equipment to depreciate—rather than to see their depreciation allowances drop and their taxes rise.

Furthermore, the Eisenhower-Humphrey tax revisions have written the principle of accelerated depreciation into the federal tax structure, giving business an added incentive to feed the fires of an investment boom.

The present pressures in the money market may well be merely a mild problem, by comparison with the growing unbalanced condition in the economy. When the vast new facilities now being built are in place and operating, will consumer activities be great enough to maintain high levels of production and employment? Will there be customers for the rising output made available by new and improved plant and equipment?

The personal consumption share of the gross national product has declined in 1956, while the capital investment share has risen. Personal consumption expenditures were an average of 67.1 per cent of the nation's total output of goods and services during the years 1946-1954, including the Korean War period, when consumer activities were depressed to make way for the national defense effort. These consumer expenditures were 69 per cent of total national output in the relatively prosperous peacetime year, 1948. By the first nine months of 1956, personal consumption expenditures had declined to 64.7 per cent of the nation's total output.

The reverse has been true of business expenditures for new plant and equipment. These expenditures were an average of 7.8 per cent of the gross national product in 1946-1954, including the immediate post-war years when large-scale capital investment was required after the long period of depression and wartime restrictions. In the first nine months of 1956 new plant and equipment expenditures accounted for 8.5 per cent of the total national output of goods and services.

Balance must be restored to the national economy if we are to avoid the possibility of difficulties in the period ahead. Consumer markets must be strengthened and broadened, through wage and salary increases and tax reductions for low and middle-income families. Depreciation allowances must be revised to grant business adequate write-offs for new facilities, without providing special tax reductions or incentives to bunch capital investment in one or two-year periods.

Private groups can assist in the process of restoring

economic balance through the negotiation of adequate improvements in wages and salaries. Government can render aid through a revision of the federal tax policy and structure.

Such revision should be a first order of domestic business for the new Congress when it convenes in January.

In addition, minimum wage protection must be extended to the millions of workers now earning less than the \$1 an hour provided by law.

The health of our economy also requires some positive federal action to improve the lot of the many chronically distressed areas in the United States.

The tight money policy of this Administration, which has been tilting with the windmills of inflation, must be reversed if the economy is going to grow and expand sufficiently to attain maximum employment, maximum production and maximum purchasing power.

Only in these ways can we begin to develop a consistent pattern for full employment in which all Americans will share.

END



Stanley H. Ruttenberg, AFL-CIO research director, speaks from 20 years' experience, mostly with CIO



Level of output in late 1956 should continue, perhaps increase

THIS MEANS:

Consumer activities will be key to output and employment levels



HOW'S BUSINESS? today's

An authoritative report
by the staff of
The Chamber of Commerce
of the United States

AGRICULTURE

Although current farm production may be high enough to meet the nation's 1960 needs, substantial readjustments may be necessary to feed our growing population for the period 1960 to 1975.

Two recent studies by the U. S. Department of Agriculture show that more expensive, higher quality diets encouraged by higher incomes, plus our population growth, will increase substantially the needs for beef, pork, milk, poultry products, fruits, vegetables, and feed concentrates during the next 20 years. Moderate increases are likely for fats and oils, cotton, and tobacco. Little change is foreseen in the total requirements of the food grains and potatoes since a declining per capita consumption rate will tend to offset the needs for a larger population.

The reports project a need by 1975 for increasing the production of livestock by 45 per cent and crops by 25 per cent above average 1951-53 production. The studies estimate this would require 150 million more acres of cropland than are in cultivation. With only a net additional 25 million acres considered available, farmers will need to step up productivity per acre 20-25 per cent above present levels and make the necessary adjustments of acreage among crops.

CONSTRUCTION

Better buildings for the money will certainly be the end result of the work of the Building Research Institute.

BRI conferences have generated high interest among the 3,800 research-minded building materials and equipment manufacturers and distributors, design professionals, and the mortgage finance and real estate people who have attended the past 12 sessions.

Cooperation in producing a science of building is emerging from these well conceived forums.

Competition to produce acceptable pieces of buildings is heightened as examination of possible technological changes takes place.

Retraining of construction mechanics will be needed in some trades as new building components require new methods of application.

Final product: better housing, better places to work, at less cost. All the result of technological research in building.

CREDIT & FINANCE

With business prospects continuing favorable, this is the finance picture for 1957.

Automobile production is gathering momentum with the output of 1957 models expected to increase weekly. Average hourly pay of factory workers hit an all-time high of \$2 in September and personal income advanced.

U. S. Government and corporate bonds have been very quiet, and steady to fractionally higher. Municipalities have declined somewhat with heavy offerings now in prospect.

Manufacturing and trade inventories rose to \$85.4 billion in September, an increase of \$6.5 billion over a year earlier.

Stock market prices may continue to fluctuate widely on reduced volume reflecting the uncertainties of the international situation.

The nation's high level of employment should keep consumer buying buoyed up through 1957.

The Treasury's July-September receipts leaped to \$1.7 billion over a year ago. Budget keepers hesitate to boost the \$700 million surplus estimate for this year. Rising revenues alone won't provide a surplus large enough to comfort the budgeteers.

DISTRIBUTION

Retail, wholesale and service businesses have every reason to expect that sales in 1957 will be better than in 1956.

Employment, wage rates and personal incomes are expected to rise moderately next year. Industrial production, business investment and construction will more than likely equal this year's rates.

Consumers are highly optimistic. Latest nationwide survey by the University of Michigan indicates that 75 per cent of consumers expect good times in the coming year, that 35 per cent of the families expect to be better off a year from now, while 45 per cent expect no change.

A Dun & Bradstreet survey of retailers, wholesalers and large and medium-sized manufacturers shows that businessmen are looking forward to a favorable first quarter in 1957. Of 1,597 business executives surveyed, 60 per cent expect an increase in sales in the first part of 1957 and 34 per cent expect no change.

Also, a 15-man delegation from the National Retail Dry Goods Association told President Eisenhower at a White House meeting that retail sales in the first half of next year would rise 2½ per cent above the same period of this year. (See "1957: Management's Plans," page 36.)

FOREIGN TRADE

The European common market idea appears to be gaining strength. Britain has gone so far as to sound out the governments of the commonwealth as to whether it might not be advisable for her to become a member.

The common market, first advanced at a meeting of the Organization for European Economic Cooperation in July, would eliminate the barriers to free movement of capital, labor, goods and services among the participating nations, and would permit them to establish a joint tariff against other nations.

Many difficult problems need to be solved before a European free trade area becomes a reality but, although difficult, they are not insuperable. It is certain that the present pattern of U. S.-European trade would be significantly affected in the

outlook

event that the principal trading nations of Europe should succeed in forming a regional economic bloc.

GOVERNMENT SPENDING

In Mid-January the President's budget for 1958 will be unveiled. Preliminary indications are that it will be substantially greater than that for fiscal 1957. Only the continuance of higher revenue yields will make possible a balanced budget, and even then there is some doubt of its being achieved.

Defense spending, already propelled to an all peacetime high, is being given further impetus by world tension and conflict. More expensive operation and maintenance is cited as the reason for the requested increase. New and bigger bombers and more research add to the totals.

Economy proponents will ask Congress to continue strengthening military forces but to curtail spending by eliminating triplication and waste in defense organization and management.

Nondefense spending moves upward with proposals for foreign aid, education, and agriculture leading.

LABOR

When the 85th Congress swings into action, labor will be busier in the legislative halls than ever.

Vigorous political action is an integral part of the work of unions today, and considered by some union leaders as equal in importance to successful bargaining.

The AFL-CIO lists the objectives which it seeks. Among them are:

1. Repeal of Taft-Hartley.
2. Increase federal aid to education for public school construction.
3. Revision of Social Security, unemployment compensation, and establishment of a national health insurance program.
4. More federal public housing.
5. More public power.
6. Increase in personal tax exemption.
7. Removal of federal tax exempt status that applies to municipal bonds.
8. Government control of atomic energy and natural resources.
9. Federal assistance and government contracts to depressed areas.
10. Minimum wage extension.
11. Davis-Bacon inclusion in all government contracts.
12. Federal disaster insurance.



NATURAL RESOURCES

A whole new field of opportunity for use of high-temperature alloys in jet aircraft and civilian items has been opened by the Defense Department's cancellation of the quota system on tungsten, cobalt, chromium, columbium, nickel, and molybdenum.

For example, when the quotas were put on, tungsten was in short supply. But now, under the stimulus of government purchases of domestically mined tungsten at higher than present import prices, domestic production of tungsten exceeds consumption. Foreign tungsten production was also stimulated.

Under the quota system, the aircraft industry was limited to alloy X-40, developed in 1942, for use in the blades and vanes of jet aircraft. With quotas lifted, the industry can use alloys with a higher tungsten content, such as the WI-52 alloy developed under the research program of the Tungsten Institute, the trade association of the domestic tungsten producers. Using five to ten per cent more tungsten increases the life of the new alloy at 1600° F. by a factor of 20 to 30 times, and the strength has almost doubled.

TAXATION

Now is the time to evaluate tax prospects for the coming year.

Small corporate business appears assured of a tax reduction. The Cabinet Advisory Committee on Small Business has recommended reduction of the corporate normal tax rate to 20 per cent from 30 per cent. The President has promised prompt action. Rep. Reed, ranking Republican member of the House Ways and Means Committee, has given it his blessing—as have a number of Democrats.

Noncorporate small business will share the fortunes of other individual

taxpayers. For them the future also looks brighter than it did a short time ago. During the final weeks of the campaign both parties proclaimed tax rates too high. Both proclaimed a desire to reduce the rates—but with considerably differing emphasis as to the area or form of reduction.

There will be much ado about the so-called special provisions which have crept into our tax laws. Wide publicity is being given the idea that rates can be lowered if these "holes" are plugged and the tax base broadened.

TRANSPORTATION

Two synonymous terms "controlled access" and "limited access" will be heard many times in connection with the planned Interstate Highway System. These terms mean that abutting property owners cannot enter or leave the freeway except at carefully selected locations and, in the main, only at grade separated intersections.

Modern motor travel has brought about a complete change in the concept of roads and streets. Originally they were used and legally recognized primarily for the purpose of providing access to abutting property. Today, because of the need to accommodate ever increasing volumes of faster, longer distance travel, the major consideration must be given to safe, expeditious movement. This changing concept has been clearly reflected in court decisions where access has been denied to property abutting an expressway.

To many property owners and merchants affected by these routes, control of access might appear to spell isolation and loss of value. Experience has proven that in most cases both business and property values have not been hurt and often have benefited when this type of highway design has been tried.

CITIES FACE GIANT HOUSE HUNT

► Foresight can ease impact of relocations road program will bring

A MASS moving day may soon be coming to your community.

Nine out of every 10 cities of 50,000 or more population will be linked by the new multimillion dollar highway system recently approved by Congress. Nearly 7,000 miles of new superroads out of the 41,000 miles authorized will push through urban areas with their developed residential areas and business districts.

This means every sizable community faces a big job of relocating the families and commercial establishments that must vacate the rights of way.

How big a moving job lies ahead for your community? Consider that construction of just eight miles of freeway in Chicago required the relocation of 13,000 persons plus 450 businesses. All urban interstate

mileage will be built to full freeway standards, often with block-wide rights of way and land costs as high as \$10 million a mile. Hundreds of additional miles of city roads, entailing similar relocation problems, will be built under the continuing federal aid primary and urban road programs.

Although most of the 2,500 smaller communities lying along interstate routes may be bypassed, cities will be penetrated because they are the origin or destination of the bulk of the traffic. Thus your city can't escape the relocation job. But it can make it a much easier one by following some simple rules drawn from the experience of the few cities that have faced this problem. That only a few cities have developed relocation plans to date testifies to the size of the upcoming job since 95 per

cent of projected urban freeway mileage remains to be built.

Because of variations in state laws and accepted practices in right of way matters, no one formula will fit every situation. But some rules apply in all cases.

You, as an important citizen in your community can:

- Face the fact that moving day is coming and get ready for it at once. Give the relocation problem the same careful advance planning that goes into other phases of the highway program.
- Remember that you're dealing with people and not just real estate. Give human relationships a high priority in whatever plan you adopt.
- Take an inventory of your laws and ordinances governing right of way acquisition and relocation of families and businesses. Find out how you can help in the required moving. If your laws need modernization, 44 of 48 state legislatures meet in 1957.
- Thoroughly check your real estate situation, enlisting the cooperation of realtors, builders and rental agents to determine what's available in housing and business sites. Communities with space available on moving day will fare better than shortage areas.
- Entrust the relocation job to experienced personnel who have tact and patience.
- Let the public know why the relocation is necessary and how it will be accomplished. People cooperate better when they know the reason.



New expressways, like this in New York, mean moving homes and businesses in nine out of 10 cities

► Give the persons to be relocated as much advance notice as possible to permit maximum time for house hunting or selection of new business sites. Some state laws permit acquisition of right of way for future use. Other states permit acquisition for immediate use only.

► Develop and maintain close working relationships with your state highway agency so city and state action will be coordinated. Cities with unified street traffic departments are better able to conduct the intergovernmental relationships required by the new construction program than cities where highway responsibilities are divided among several agencies. The more time that people have to get ready, the easier and less expensive the matter of relocation.

► Make sure that whatever plan is developed provides equal treatment for all similar cases. Discrimination or favoritism will alienate public support.

Experience has shown that, where these rules are adhered to, families and businesses can be relocated with a minimum of inconvenience and without loss of population or payroll to the community. Nor will the city tax base be adversely affected.

If your community can accept financial responsibility for relocations as a necessary part of right of way acquisition, it may find in New York City's plan a partial answer to its problem.

Because New York's highways have cut through apartment and tenement districts as well as through single family residential areas, its relocation plan embraces both tenants and home owners. Current practice is far different from that of prewar days when people were simply served with notices to vacate and a city marshal evicted those who did not comply fast enough. City Construction Coordinator Robert Moses, is given major credit for the change.

New York now accepts full responsibility for relocation of every family that wants help. From the end of World War II to midsummer, 1956, more than 6,200 families had been relocated at a cost of \$5 million to make way for \$360 million worth of highway building. Although the city handles the details, the state shares the expense. For apartment dwellers, moves average about \$450. Costs are higher for home owners.

Land and buildings are acquired by condemnation with courts fixing prices at current fair market value, rather than on the usually lower assessed valuation. After the city

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• From a small basement print shop, in 1907, to one of the nation's largest lithographic organizations and the world's largest publisher of children's books and games—that's the growth story of Western Printing and Lithographing Company. And from the very beginning, the company has been distinguished by its personal regard for people and its active interest in better performance.

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GIANT HOUSE HUNT

continued

takes title an experienced real estate man is hired as relocation agent.

First, the agent sets up an office convenient to residents of the affected area. Next he seeks out and interviews everyone who will have to move, finds out his space requirements, what he is paying for rent, how much he can afford, where he might prefer to live.

To avoid disappointments, the agent takes into account the proximity of schools for families with children, location of churches and shopping centers and transportation from available locations to places of employment.

Then from available vacancies he sets out to find a new dwelling satisfactory to the tenant. This part of the job is a must. In one instance an agent could find no suitable apartment for a low-income family of 13. So he arranged for the city to buy a house and lease it to the family at a nominal rent. The agent helps arrange suitable leases, negotiates with drayage firms, and often pays for such extras as venetian blinds or a new paint job.

Families that qualify for low rent public housing have a priority under state law for vacancies. Those who prefer to find their own apartment, without help from the agent, get compensation of \$100 per room to cover drayage and other moving expenses.

For hundreds of New York families the relocation program has made possible a move from a tenement to a modern building.

Four alternatives are available to home owners. Some simply accept the market price for their property and buy a new residence. The city either sells or wrecks the house.

A home owner who wishes to keep his present house may buy it back from the city for a nominal amount. After he has bought a new lot he contracts with a mover to transport the residence. The difference between what the owner gets for his old property and pays for the new is sufficient to pay moving costs and leave a slight profit to compensate for the inconvenience.

In some cases the city has laid out new subdivisions, provided utilities, paved streets, landscaped the grounds, moved existing houses to new and larger lots and paid owners \$1,000 to cover the inconvenience. Often the city buys lots in established neighborhoods, moves the house at municipal expense, and pays the \$1,000 bonus to compensate for inconvenience.

A special machine, which New Yorkers dubbed "The Monster," makes it possible to move single family dwelling units in a matter of hours. Usually a foundation is built and utilities brought to the new lot while the house remains at its old site. Then when all is ready, the Monster picks up the dwelling and transports it to its new location. Utilities are connected, and residents are set up for housekeeping again in less than a day.

So advanced have building movers become at their trade that New York has taken entire apartments from rights of way to new sites while tenants continued to live inside.

At present the city is planning a multimillion dollar apartment development to accommodate tenants who will be moved off the right of way of a future highway and bridge project.

Many quite complex factors are involved in the choice of a business or industrial site. They include proximity to markets, availability of labor, sources of supply, in addi-

ers. A city agency, the Housing and Redevelopment Coordinator, was assigned the job.

As in New York, the first step in the Chicago plan was a call by one of the seven members of the relocation staff on the persons to be relocated. Major objective of the initial visit was to sell the need for the new highway and the necessity for the move, and to win the cooperation of affected persons. Persuasion rather than threats of legal action were used to convince those who were stubborn. It often took a series of interviews to win over older persons who had spent their lives in the same neighborhood.

Some owners asked no help from the city and simply bought new homes on their own. Only a little more than seven per cent of the families were settled in public housing developments. The majority wanted private apartments.

Because of a tight housing situation, close cooperation was maintained with the real estate industry. Lists of vacancies were revised daily and were supplied to the relocation workers.

Families that lacked transportation were transported by automobile to look at apartments. Usually several trips were required. For families in straitened circumstances the city paid moving expenses. In hardship cases, the first month's rent was advanced on a new apartment. Repayment of this loan was not pressed.

The facilities of the coordinator's office were at the service of businessmen who wanted help relocating. A few smaller retailers asked for lists of vacancies. All others preferred to handle their own moves, and did so successfully. With the exception of a few neighborhood taverns and groceries all relocated firms are in business in Chicago.

San Antonio, Texas, has completed or under construction 22 miles of a designated 66 mile freeway network. Several methods of acquiring property were tried before the present method was settled upon. Although the city accepts no formal responsibility for relocations, its plan eases the problem for householders and businessmen.

Property is appraised by experts hired on a flat fee rather than a percentage basis. When a price has been fixed, a citizens' committee reviews it. Then a city negotiator makes an offer to the owner. By keeping appraisals well in advance, the city assures owners about six months to find a new place. Knowing how much they will receive and that the money is available when they want it permits most owners to

(Continued on page 83)



The "Monster"

tion to suitable land and buildings. Thus businessmen, after receiving fair market value for property taken, have preferred to handle their own relocation. In view of the big relocation job that lies ahead, however, New York City is awaiting state approval of a plan to compensate businesses for relocation expenses. Payments would be on a formula basis, taking into account the size of the establishment, distance to be moved and other factors.

Chicago's Congress Street Superhighway, first unit of a projected freeway network, penetrated a densely populated area extending from the western city limits to the downtown business district. Major relocation problem was finding new rental property for apartment dwell-



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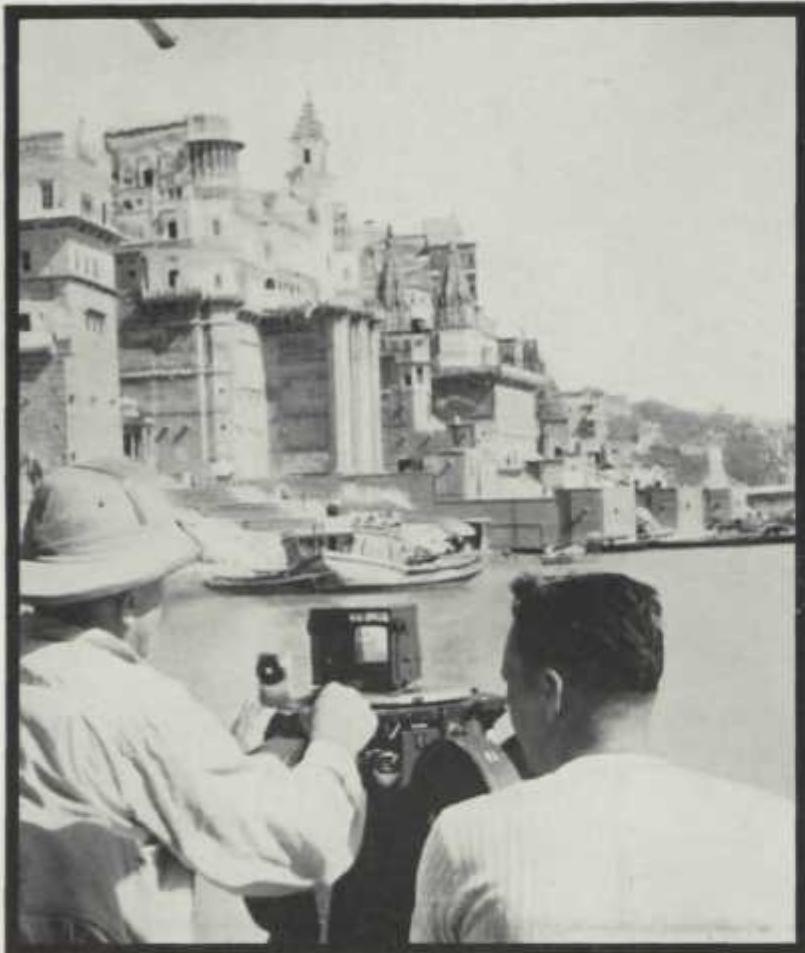
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TRANSPORTATION

continued from page 35

moves up, so does traffic. With national product now over the \$400 billion mark, intercity freight movement has reached a total of one and a third trillion ton-miles.

Estimates now are that G.N.P. in 1975 will exceed \$700 billion. This would mean intercity freight volumes exceeding 2 trillion ton-miles—double the volume of traffic in 1950.

Population growth alone indicates how the industry's carrying capacity will be taxed in the years ahead. Every person in the United States uses some 18 tons of materials each year, including fuel, building materials, food, cloth, and all the other ingredients of modern living. An estimated population increase of 50 to 60 million between now and 1975 will mean that, in 18 years, the transportation system will have to carry a billion tons more per year than it does today. It is probable that an increase in per capita consumption in the years ahead will boost the figure much higher.

Population growth will also mean more travel. Each person in the United States now accounts on the average for 4,300 miles of moving around per year. If 60 million persons are added to the population by 1975, a quarter of a trillion passenger-miles will be superimposed on U.S. travel totals.

Another reason for optimism over future traffic is the carriers' growing willingness to cooperate with competitors to provide more economic use of available facilities.

These are some of the efforts at coordination during 1956:

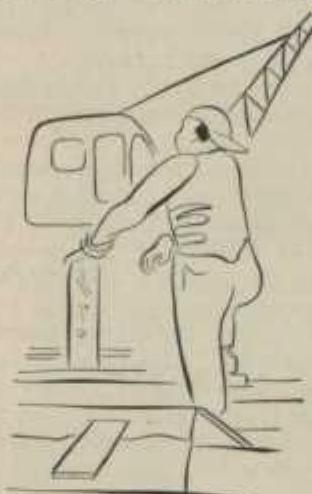
Transportation of truck trailers on railroad flat cars continued to expand. By midyear 33 big railroads had inaugurated piggy-back service. Some 3,000 flat cars were hauling truck trailers, and 1,300 new trailer flat cars were on order. In October the Pennsylvania Railroad announced a record movement of 1,000 truck trailers per week, involving joint operations with 28 motor carriers.

Another step in the same direction is the transportation of truck trailers and container bodies by water. These roll-on, roll-off trailer ships promise to cut heavily into loading and unloading costs. The use of lift-on, lift-off containers promises even greater economies. In 1956, military interest in "fishy-back" transportation initiated the construction of a trailership capable of accommodating 200 truck trailers at 20 knots.

The first commercial pipeline for the transportation of coal has been completed with the cooperation of interested railroads. The 110-mile line, serving the Cleveland area, provides a 10-inch pipe that will carry crushed coal mixed with water at a rate of 150 tons per hour.

The airlines joined in a number of agreements with the railroads. The Southern Pacific Railroad began selling United Airline tickets at 130 railroad stations in California, Nevada and Oregon. This is the first such cooperative arrangement in the United States.

Delta Airlines recently concluded an agreement with the Pennsylvania Railroad for the transportation of its weather-grounded customers. When planes are unable to land in New York, Delta will land them



in Philadelphia, where passengers will be given taxi fare to the 30th Street Station and a free ride to New York on the Pennsylvania.

The airlines are also getting together with each other. In late 1956 ten major air carriers were issuing joint timetables for heavily traveled routes to inform air travelers of all the air service available.

Finally, more motorists are avoiding the long trip by car and renting an automobile at the railroad station or the airport to take care of the local moving around. In 1956 the biggest car deal in history featured the Hertz auto rental firm, which bought 15,600 new 1957 automobiles for \$33 million.

These accomplishments indicate the possibilities for 1957. The future of transportation, like everything else, will depend on a continuation of present economic growth trends. With that assumption, the 1957 picture is good.

Highway construction will hit a new high as the federal program continues to gain momentum. It will be too early, however, to feel the impact of the new program on motor transport.

Intercity bus travel, which experienced one of the few downward trends in 1956, will probably continue to feel the squeeze of increased auto ownership, fast air coach service, and improved rail coach equipment. Truck transport, despite higher costs and taxes, should register modest gains, with the big trucks in the lead.

Automobile sales should top 1956 as the bumper crop of 1955 buyers begin to get out from under installment obligations. The new 1957 models will be more tempting to consumers than the 1956's, but higher prices and tighter financing will help to hold 1957 markets well below 1955.

In the freight field the tide seems to have turned for the railroads, and another record year seems probable. Waterway and pipeline traffic should also maintain the pace of recent years by setting new records again in 1957.

In air transportation there seem to be no obstacles in the way of another banner year. U.S. airlines will have 220 new planes delivered in 1957, 166 of them 4-engine models. Domestic plane travel should come close to overtaking the railroad total—excluding commuting—as rail passenger volume remains relatively stable. International air travel should respond further to new low rates and increasing use of high-speed aircraft—assuming a peaceful world. Local service carriers will continue to set the pace, percentage-wise.

Local air carriers, which until recently were experimental lines with temporary federal certificates, have now graduated to permanent scheduled airline status, the same as the major trunk lines. Some 500 cities and towns across the country are now on the local air map. More than half of them have no other airline connection. Businesses in out-of-the-way communities have been geared into the air age by such carriers as Piedmont, Bonanza, Ozark and Allegheny. With some 3,500,000 customers in 1956, ten years of short-hop airline operations have seen a 15-fold increase in passengers.

On the downside, a drop in local transit by street car and bus seems inevitable as increasing automobile ownership and the sprawl of the suburbs reduce the potential for public transportation. But a relatively stable level of patronage may be expected in the largest cities, with rapid transit experiencing some increase.

The final balance sheet: The fast pace set in 1956 will carry over into next year—and beyond.

—WILFRED OWEN

HOW TO MAKE JOBS MEAN MORE



Modern firms show job in new light, improve communications, get more from workers

GET EMPLOYEES interested in their work and keep them interested.

That's how an increasing number of business managements today are easing such problems as absenteeism, employee grievances and turnover, worker error, apathy and lack of loyalty, friction between departments, difficulties in developing middle management, customer complaints, training and motivating a sales force.

But how can management stimulate employee interest in the firm they work for?

Arousing this interest is largely an emotional problem. People perform best in a stimulating climate, just as an electronic brain operates most efficiently under properly controlled temperature and humidity.

Forward-looking managements are, therefore, giving more attention to ways of creating a better psychological climate for their workers.

The basic goal of most normal workers is about the same. They want to give their life meaning through the quality of their work.

Any normal individual in any job, therefore, has something extra to contribute to that job—or believes that he has—beyond simply performing it manually.

The degree to which any business is able to release these energies and creative abilities of the people within it does much to make one company great and another mediocre.

These precepts have been applied to business by Henry Strauss, a 41-year-old New Yorker who heads his own firm, which he calls "Communicators of Ideas." Mr. Strauss has helped release the creative energies of employees of such clients as General Electric and A. T. & T. through application of such theories as:

1. People are the most important asset of any firm.
2. The average employee usually is willing to give his best for bettering his company because, in making this contribution, he helps to give his life meaning.
3. If he can't transmit what he has to give, the employee feels frustrated and becomes a poor worker.
4. This hurts his employer in two ways. The employee is less efficient than he might be and the firm loses the benefits of useful ideas the employee might have had to contribute.

Broadly speaking, according to Mr. Strauss, the above problems result from a few general reasons:

1. The worker's failure to understand his job as related to other jobs

in the company. He sees only the thing he is doing and not the finished product. He is soldering wire number three instead of building a television set.

2. The company's communications to and from the worker are not satisfactory. The worker is given no understanding of what his future may be, where he can go in the company, what the company is, what its objectives are and its prospects for attaining them.

3. The worker is not stimulated to grow.

A skilled investigator can sometimes tell when employees feel this way by talking to them. Either they cannot answer questions about their work or they will open up and say they don't know what is going on.

Improper communications affect adversely all grades of employees. A vice president who is not given the word on some important change in policy is confused, angry and unhappy, as the janitor may be who is not told why he should sweep only in a certain direction.

Failure to see one's job in complete perspective has a bad effect not only on the assembly line, but upon employee relations with the public. The employee who understands and appreciates his company can do an important job of public relations when he talks about his work.

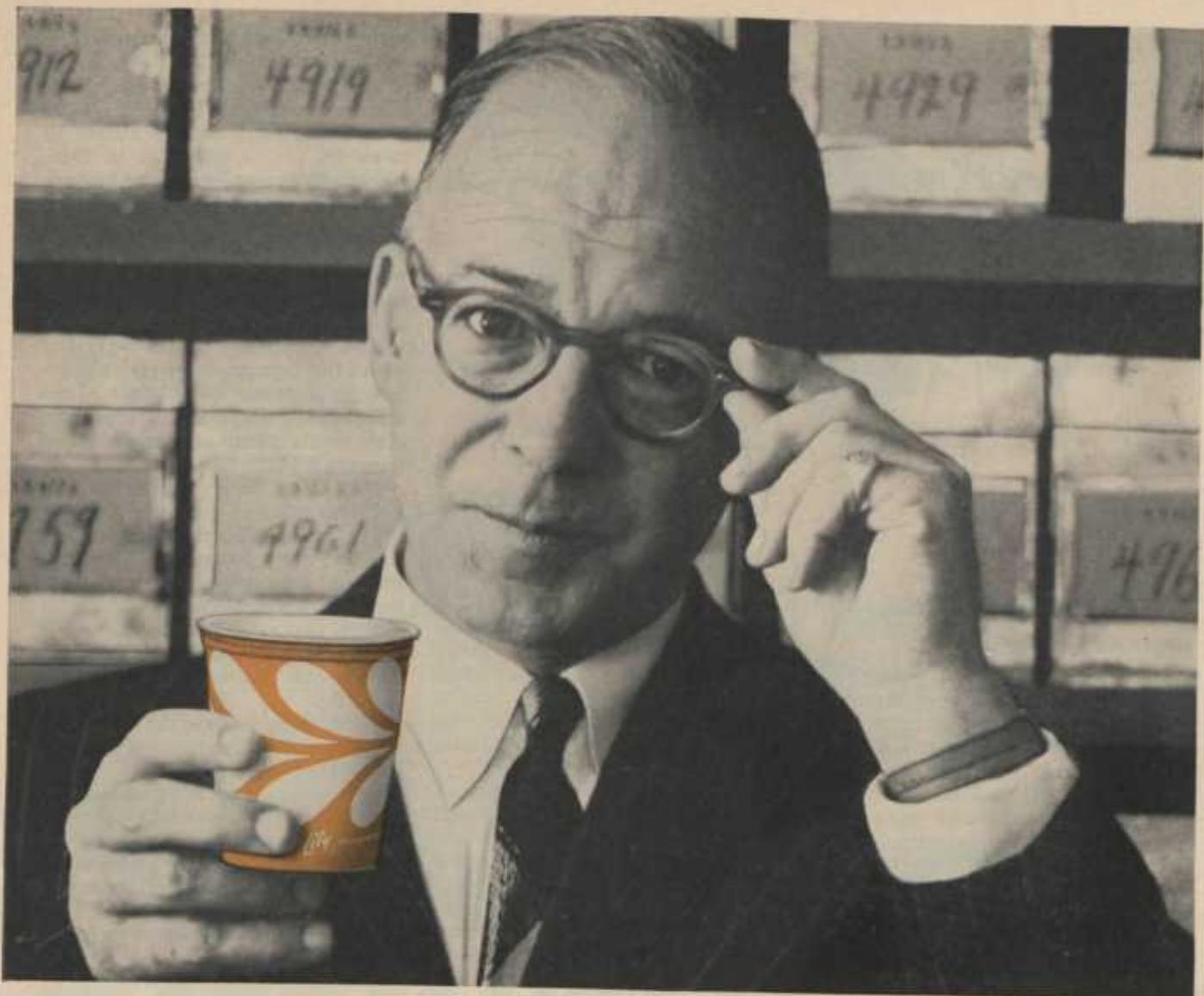
The same holds true with salesmanship. Unless a salesman understands his product fully, he sells merely an item. A good salesman sells the service that the thing he is handling can do. The president of a company, for instance, can usually sell very well because he knows the whole picture of his product.

The first step for management to take when it sets out to make a more stimulating atmosphere for its people is to try to understand why its people feel the way they do.

The president of a firm could find this out himself and do something about it if his employees numbered, say, 200. However, in a company of 200,000 people, an individual or small group could not begin to get around to everybody.

In large firms motivational programs may be used to take the place of the intimate, personal touch of top management that is possible only in small organizations.

Such programs can be established by the company itself or with the advice of a human relations research organization or private firms. These programs can include slide films,



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JOB MEAN MORE

continued

case history recordings, posters, books and other tools to show employees that the company has confidence in them, believes in them and wants them to have opportunity for growth. In Mr. Strauss' view the material needs to be emotional.

It must appeal to the hopes, desires and fears of people generally and incite employees to do a better job, not because they owe this to the company, but because they owe it to themselves. That's the key to his approach.

This is in line with the doctrine that a job well done helps to make more satisfactory the life of the doer because it helps fulfill the urge of his ambitions and dreams. Mr. Strauss is convinced that much mental turmoil and soul searching must

be aroused within its personnel if a company is going to make decisive solutions of the important problems.

His own favorite tool for doing this is the motion picture.

"What we try to do with our films," Mr. Strauss says, "is to provide inspiration and guidance."

One of the most common and serious results of postwar business growth is that frequently a man and his dreams get lost in the industrial picture. The company that employs him has become so huge that the individual becomes a part of the machinery. A good example of what can happen then is the case of Pan American World Airways.

Before the war Pan American was a relatively small and personalized group of pioneers. This gave its employees status and glamor. Their romantic connection made stewardesses and ticket salesmen proud of their job and willing to throw them-

selves into their work because they felt they were making history. World War II brought in the air age. Then airlines became big business. In 15 years Pan American grew almost 10 times the size it had been in 1940. New postwar employees came to work with stars in their eyes, but the allure soon wore off when they realized they were working for a mass transportation medium that carried more salesmen than millionaires and explorers.

The company began worrying about the industry-wide rising number of customer complaints about courtesy, impatience, inaccuracies, wrong plane assignments, lost baggage and the like.

PAA hired Henry Strauss' firm to help rekindle in its employees the fire and pride they had known when the firm was a pioneer. Mr. Strauss and his men traveled the system, interviewing employees, observing incidents and experiences. Then they put together a program intended to:

1. Increase employee pride in the company.
2. Create in the employees' minds their own identification with the organization.
3. Cause employees to appreciate the firm's past, feel a part of its present and a responsibility for its future.
4. Make each employee proud of his job, increase his understanding of it and his skill at performing it.
5. Show employees what it feels like to be a passenger.

Two half-hour films were made for general employee consumption. One reviewed PAA's pioneering past. The other was the story of a flight forced down on a tropic isle. It played up the passengers' emotional distresses caused by the delay and traced the various slip-ups that added up to the debacle. The films were designed mainly to condition PAA employees for participation in conferences in which they were to work out their department's problems themselves.

The program then branched into eight different courses, designed for certain employee groups ranging from flight crews to filing clerks. Sound recordings, for example, inspired discussions among stewardesses or ticket selling groups about how best to handle typical difficult situations.

Pan American has spent more than \$1 million in four years on the program, which is still being taught to new personnel in each of the 90 PAA stations in 52 countries by 340 of the line's employees who had been developed from a small group of Strauss-instructed employees.

Pan American reports that since adopting this program, absenteeism has dropped about 20 per cent; per-



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JOB MEAN MORE

continued

sonnel turnover has gone down by about 20 per cent and the ratio of letters of complaint to those of commendation have been reduced by 50 per cent.

Another result of great postwar expansion has made operations within a company so vast and complicated and has so divided responsibility that one man can seldom make far-reaching decisions. He must work out decisions in meetings with other department heads. This has made the committee and the conference so important within companies that some General Electric officials maintain that both have been made ridiculous from overuse and misuse.

Actually the conference is one of the best ways to develop group understanding that results in group action. The main trouble is getting leaders who know how to conduct them.

"A conference," GE training consultant John McCarthy says, "upsets everybody's day, and there are at least 20 obstacles to its achieving something worthwhile. Conferences are called at the last minute. The conference leader is not prepared and those who are summoned often are not told ahead of time why they have been included. Two men who can't get along on the job are seated together at the conference table. Many conferences consist mainly of watch-watching. Some people who know nothing about the matter to be discussed are usually invited because somebody is afraid they might be offended."

General Electric management got the feeling a year or so ago that the organization had been having far too

many nonproductive conferences. Henry Strauss was employed to help create understanding of the problems that a leader has in running a conference. The resulting film, "All I Need is a Conference," is the story of how a leader undertakes successfully to iron out delays in delivering a certain product at a meeting of department heads.

Using a series of diplomatic techniques, the conference leader threads his meeting through conflicting interests and emotions until the members finally get down to business and reach a solution. The methods he uses to arouse interest, circumvent prejudices and personality clashes are taken from the techniques of some of G. E.'s most facile conference leaders. Their methods are explained and explored fully in a couple of books that, with the film, make up a sort of conference leadership course that has been shown in a year to supervisors in G. E.'s more than 100 departments, employing some 250,000 persons.

Besides G. E.'s use of it, copies of the film and the books that accompany it have been bought by 255 firms here and in other countries.

Still another unhappy result of great postwar industrial growth has been felt by the New York Telephone Company in getting to employes information the company wants them to have. Twice yearly NYTC sends information about rate changes, new equipment, and so forth, to its supervisors for transmission to its 85,000 employes.

NYTC sets much store by this because surveys show that subscribers who talk regularly with telephone company employes have a 20 per cent more favorable attitude toward that utility than others. Phone company employes say that telephone matters arise in their con-

versations with 47 per cent of people outside the company.

Three out of four NYTC employes say they enjoy talking about the company with outsiders. Yet, in some departments, up to 55 per cent of employes say that they do not enjoy such conversations.

NYTC management has concluded that the reason for this reluctance is that their supervisors have not acquainted these employes properly with company information because the supervisors have not understood how to communicate ideas.

Nine out of 10 subscribers expect telephone company employes to know the answer to any question they may ask about the company. Furthermore, subscribers hold the phone company responsible for any slip-ups in judgment or in public relations that individual employes might make.

Mr. Strauss has made several motion pictures for NYTC to help solve various problems. One film is aimed at motivating supervisors to transmit more effectively information from and about the company to those working under them.

Mr. Strauss first saw the logic in these ideas of emotional motivation during the war when he was in charge of training gun crews on a submarine chaser in the Pacific. More important ships were constantly appropriating his subchaser's gun crews as soon as they were trained, leaving the chaser with a dozen raw recruits who had never fired a gun in battle.

Mr. Strauss began to experiment by giving one new gun crew a book of instructions to study. He would work at motivating a second gun crew into an eager attitude toward the gun by addressing the men:

"A Jap Zero," he would say, "has six 20 mm guns. You have one 50 mm gun. From the time you spot him on the horizon until the Zero is in range is X seconds. If you drop a shell on the deck and have to stop and pick it up, you get no chance to shoot at him. He has shot his guns, dropped his bombs and gone, and maybe you are dead."

"Perfection in gunnery is all that stands between you and the bottom of the ocean. If you want to live, you've got to learn to shoot these guns—and quick. Here is the gun; start working on it. Here is the book of instructions."

Mr. Strauss found that the best crews resulted from a combination of motivational stimulation and study of the book.

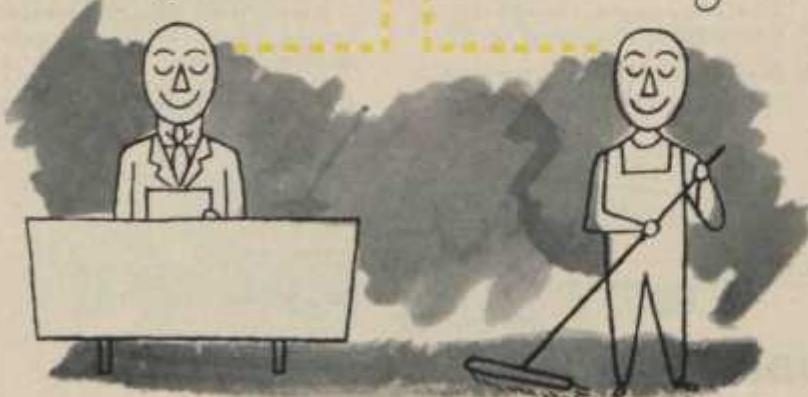
Today he is applying the motivation principle to the creation of good employe attitudes toward their jobs.

—RUFUS JARMAN

Both want
their jobs ...



to have
meaning



STRATOSPHERE

continued from page 15

for human beings. At first, laboratory animals were used.

Sublethal doses of ozone induced edema, severe hemorrhage in the lungs, and retarded weight.

The logical next step was to test ozone on humans. Dr. Hans-Georg Clamann, physiologist at the School of Aviation Medicine, Randolph Air Force Base, Texas, volunteered to be the guinea pig.

In the first study of human reactions, Dr. Clamann remained in the ozone chamber for two and one-half hours, breathing a concentration of two parts ozone to a million parts of air. The vital capacity of Dr. Clamann's lungs was reduced, but he was sufficiently recovered by the next day to participate in a second test.

Although considerable controversy exists on the subject of ozone toxicity, it is generally agreed that concentrations greater than one part per million by volume should be considered unsafe for long term exposure by humans.

The American Medical Association and various public health organizations recommend that concentrations exceeding one part in 10 million by volume should not be considered safe for long exposure.

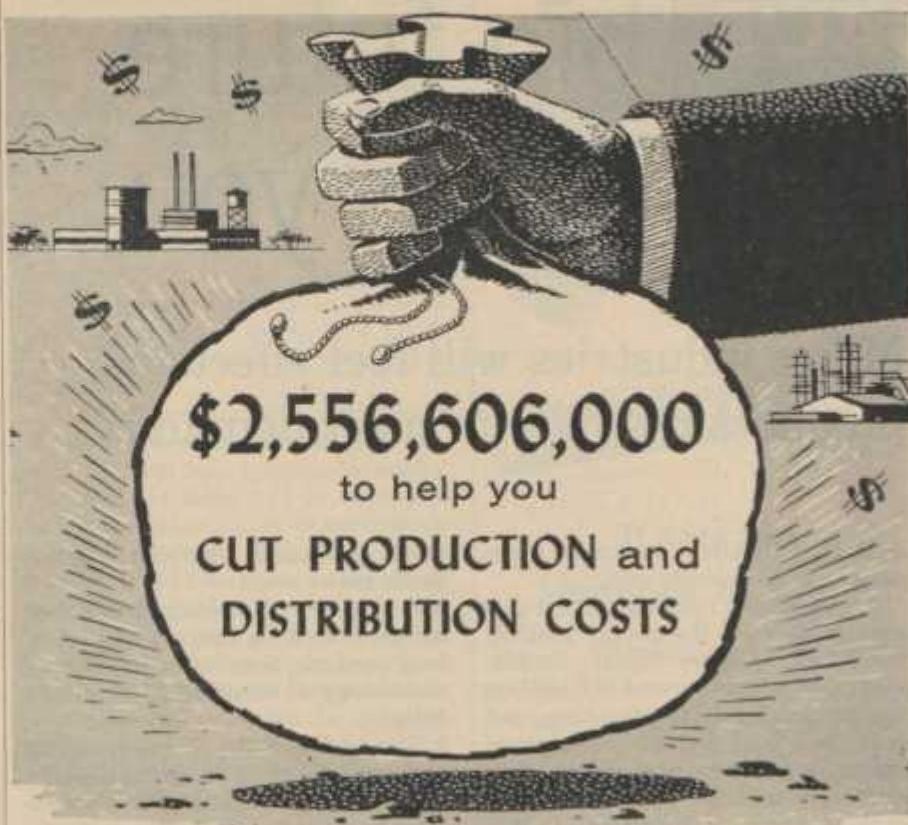
However, there is good evidence that a little bit—very little—of ozone may be good for the human metabolism. Further investigation is necessary to determine the exact level.

A study is now under way at Armour Research Foundation to determine what effects ozone has on respiratory diseases. One avenue of research that will be explored is whether resistance to these diseases is lowered by abnormal amounts of ozone. This may yield further information on the effects of smog on human beings.

Ozone also is produced when the sunlight comes into contact with hydrocarbons and oxides of nitrogen. Thus, ozone is a by-product of industrial smog.

Ozone also has other villainous traits. For example, it is the enemy of high voltage cables because it causes rubber to crack as if cut with a sharp knife. The ozone in this instance apparently is formed by the electric field around the cables. Further study also is needed on the possible damage that it may cause to automobile tires and other rubber products and installations in smoky industrial areas.

Dr. HALDON A. LEEDY,
Director, Armour Research
Foundation of Illinois Institute
of Technology, Chicago



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This message sponsored jointly by the State and The Georgia Bankers Association

COAL'S big future touches you

Many industries will feel effects as production swells to meet demands

YOUR FUTURE business plans may have to include coal.

To meet new customer needs and win its share of the energy market, the coal industry must double, maybe triple, its current 500 million ton output by 1975. By then, not only will coal be driving electric power generators and firing coke ovens, it will be powering autos, cooking meals and heating modern homes, curing illnesses and making women more alluring. A multibillion dollar expenditure, probably of both public and private funds, seems inevitable.

These are not wild or whimsical predictions, but forecasts of traditionally cautious authorities in industry and government. The potentially vast energy needs of the next quarter century challenge the capacity of industry and policies of the government, as overseer of our natural resources. Tomorrow's energy demands already are provoking

broad economic decisions today. Some major ones:

- A special congressional subcommittee is looking into all aspects of coal research, from mine machinery technology to creation of synthetic fuels.
- The coal industry is mechanizing and consolidating to strengthen its capacity and earning power to attract new capital for expansion.
- Together with its customers in growth markets like electric utilities, steel and European industry, it is devising novel transportation techniques—pipeline, high tension wire and a producer-labor-railroad shipping organization.

The U. S. Bureau of Mines reports that population growth, industrial expansion and electric power acceleration indicate that demands for energy will reach "phenomenal proportions" within the next 25 years, and each major facet of coal technology "will require early plan-

ning and action on an unprecedented scale to meet the need."

The Assistant Secretary of Interior for mineral resources, Felix E. Wormser, asserts that "potential energy demand of the future for the world as a whole almost staggers the imagination." Coal, he says, "can and should capture a much greater share of this market." Most coal industry people agree with this.

A Bureau of Mines survey this year set the total energy requirements of the country in 1975, in terms of bituminous coal equivalent, at 2.5 billion tons. Today bituminous coal supplies about 32 per cent of U. S. energy demand. Anthracite coal, less than two per cent; petroleum, 37 per cent; natural gas, 26 per cent, and water power, more than three per cent.

The Bureau notes that reserves of liquid and gaseous fuels are relatively limited—unlike coal reserves of at least 1,000 years. Even allowing for considerable increase in availability of atomic energy, coal's share of total energy demand can be expected to soar, the Bureau predicts. One authority estimates that 100 new mines—mammoth subterranean factories equipped with giant machines to scoop out two million tons a year—would be needed just to meet requirements of the next decade. An international crisis at any time could force an accelerated program for increasing production.

This potential challenge to coal, seen in the recent forecasts, comes at a time of great transition and recuperation for the industry.

Only two years ago, coal demand dwindled to a rock-bottom low of less than 400 million tons of bituminous and 30 million tons of anthracite. In some quarters, it was about to be written off as a dying industry.

The railroads, coal's best customer a decade ago, substituted the diesel engine for the steamer in a revolutionary fuel use change. The railroad market shrank from 120 million tons to 17 million in 10 years.

At the same time, the expanding use of oil and natural gas in both the industrial fuel and the home heating markets, was another blow for coal. Anthracite, in the main a heating fuel, sold only 24 million tons to retail customers last year, for instance, compared with 54 million tons in 1946. Bituminous sales to retailers last year were only about half of the 101 million tons of deliveries in 1946.

So, even in a growing space heating market, coal's wedge of the market narrowed.

Coal tonnage for manufacturing also has dropped off in relation to

NEW MARKET: converting coal to gas and oil to meet demands will require

BY 1965

1965-1974

\$ investment of \$4 billion	\$ investment of \$37 billion
steel— 2.5 million tons	steel— 22 million tons
coal—200,000 tons per day	coal—1.9 million tons per day

the industrial boom. Many companies with plants in congested areas turned to oil and gas.

In a tremendous market shift, however, the coal industry has found rising demand from the electric utilities for coal to fire boilers to turn generators for electricity. Electric utilities have more than doubled their take of coal since 1946, even with improved generating efficiency. By 1975, experts say, electric utilities will be able to use 488 million tons—more than all bituminous production last year.

The resurgence of industry in Europe has created a fuel demand now largely being filled by U. S. coal. By year's end, a new coal export record of more than 43 million tons is expected. The Organization for European Economic Cooperation (OEEC) predicts coal imports from the U. S. will eventually supply perhaps 70 million tons to Europe each year.

The steel industry's demand for coke—bituminous coal with the gases and tar baked out—has fluctuated in the past 10 years from a high of 121 million tons in 1951 to 90 million tons in 1954. These figures include coal used for beehive and by-product ovens and by steel and rolling mills. The steel market presumably will pick up in the future, as may demand from other industrial customers.

Growth also is expected in the use of coal as a raw material for chemical plants. Though a relatively small portion of tonnage goes to this market, coal is used to make aspirin, plastics, explosives, dyes, sulfa drugs, perfumes, synthetic vitamins, anti-septics, nylon, synthetic rubber, varnish, fingernail polish, ammonia, artificial silk, insecticides, baking powder, phonograph records, paint and cosmetics.

Looking ahead, Bureau of Mines researchers say it is inevitable that oil and gas reserves will diminish and price will increase, that economical and safe competitive production of energy from fissionable material along with economical production of solar energy seem impossible for many years. Increasing requirements for liquid and gaseous fuels in the next 20 years, they judge, will open up huge new markets for coal as a substance for conversion to gas and synthetic liquid fuels.

To satisfy this future energy hunger, the coal industry must solve today's problems and shape its long-range plans now, government and industry officials insist.

Many of coal's problems arise from the make-up of the industry. In 1955, for instance, there were more than 5,000 producers. The big-

gest corporate group turned out less than six per cent of the production. The 10 leading companies mined only 21 per cent of the 1955 tonnage. According to Internal Revenue figures for 1952, the latest available, the bituminous industry had a net profit after taxes of less than \$34 million.

The petroleum industry sank more than four times that much in research alone. Research in the coal industry—mainly for lack of funds—is meager compared with other industries.

Coal prices in past years have dropped as other prices went up, and mining has become a costly business. It takes \$10 or more per ton of annual capacity in some areas to build a modern deep mine. Such a mine would take perhaps two years to complete and may need sales up to two million tons a year to support it. It has to make money to attract capital to supplement its own funds. Some analysts estimate the industry will have to attract at least \$1 billion in the five to eight years ahead to replace exhausted mines and meet required capacity.

Getting the product to the customers has been a continuous headache for the industry. The major means of transport is by rail, and rail rates make up about 40 per cent of the cost of delivered coal.

Another problem is the possible leveling off in the increased rate of productivity. Coal has sped ahead of most industries in increasing productivity since World War II. Tonnage per man per day has leaped from 6.3 tons to about 10 tons this year. Giant continuous miners can gnaw out coal at the rate of eight tons a minute in shaft mines, and electric shovels 16 stories high can take 100-ton bites in strip mines. In most of today's mines, mules are about as scarce as clean fingernails.

But this almost doubling of productivity in the past several years reflects other factors besides mechanization.

In the past decade, strip mining—a cheaper method than deep mining—increased greatly, and small marginal outfits with low productivity dropped out of business.

Coal men find handicaps in certain legislation and government policies too.

Many coal people would like to see the present 10 per cent depletion allowance for coal raised to the 27½ per cent for oil and gas, and they want the four cents a net ton transportation tax on coal removed. They oppose federal construction of large numbers of nuclear power plants as a threat to the free enterprise system and a step toward socialized power.



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COAL'S FUTURE

continued

In the face of these problems, however, the industry generally is optimistic. In the words of Tom Pickett, executive vice president of the National Coal Association, representing two thirds of the bituminous productive capacity:

"We have the coal reserves necessary to meet the nation's needs. We have the know-how and the manpower to produce that coal. We confidently expect to meet the expanding energy demands within the framework of the free enterprise system, without subsidy, and we believe the nation's dependence upon coal warrants close congressional scrutiny to the end that legislative inequities against the coal industry shall be eliminated."

Coal is approaching its problems in several ways. Mergers are on the rise and will undoubtedly increase. The big producers, who control extensive reserves, hire the keenest management, make large outlays for new machinery and mining methods, draw the business and show the earnings that attract investors. The next big industry wedding is being planned by Pittsburgh Consolidation and Pocahontas Fuel Co.

Some coal men, however, get jittery at the mention of the spread of mergers as industry policy for fear the government might frown on the trend.

A dramatic innovation in transportation, a coal pipeline, has just been laid by Pittsburgh Consolidation. It stretches 110 miles between

Cadiz and Eastlake, Ohio. Pitt Consol has a contract to deliver 18 million tons of coal to the Cleveland Electric Illuminating Co. over the next 15 years. This first commercial coal pipeline is designed to move 150 tons of coal an hour in a crushed coal-water mix. Though some coal men visualize a network of pipelines some day, other officials don't expect pipelines to solve the transportation problem except in particular instances involving direct, long-term service to big customers.

Another method of transporting coal is by wire. Some electric utilities are developing transmission facilities and moving plants practically to the mouth of the mine where coal is burned to generate electricity. The electric power is then transported to the utilities' consumers over high tension wires.

A group of leading coal producers, railroads and the miners' union this year organized American Coal Shipping, Inc., to promote coal exports and overcome the shipping shortage.

Coal's major customers now are in growth industries. Also, purchasers have become fewer and larger. These consumers have to count on larger supply over a longer period. This leads to long-term contracts and better planning.

The trend in labor-management relations also predicts more stability for the coal industry.

Newly developed automatic coal-burning equipment may help coal regain its former share of the home heating and small industrial and commercial markets, coal producers believe.

Finally, the industry today is

more alert to the fact that research programs might improve every phase of its operations from automation in the mines to new forms and uses of coal.

The coal industry, with little money and unity, put only about \$4 million into research last year. Government, users and others contributed another \$14 million. This is dwarfed by research expenditures of, say, the chemical industry—\$361 million, or rubber products—\$53 million, or petroleum—\$146 million in 1953.

Last year the President's Advisory Committee on Energy Supplies and Resources Policy called coal "a great national asset" and recommended a cooperative industry-government study for research and development possibilities.

The Bureau of Mines and Bituminous Coal Research, Inc., representing industry, this year surveyed what research was underway and what might be undertaken. A few months ago, more support came to the side of those who believe plans must be made now to meet future needs. The House Interior and Insular Affairs Committee appointed a special subcommittee and its counterpart in the Senate directed a staff study.

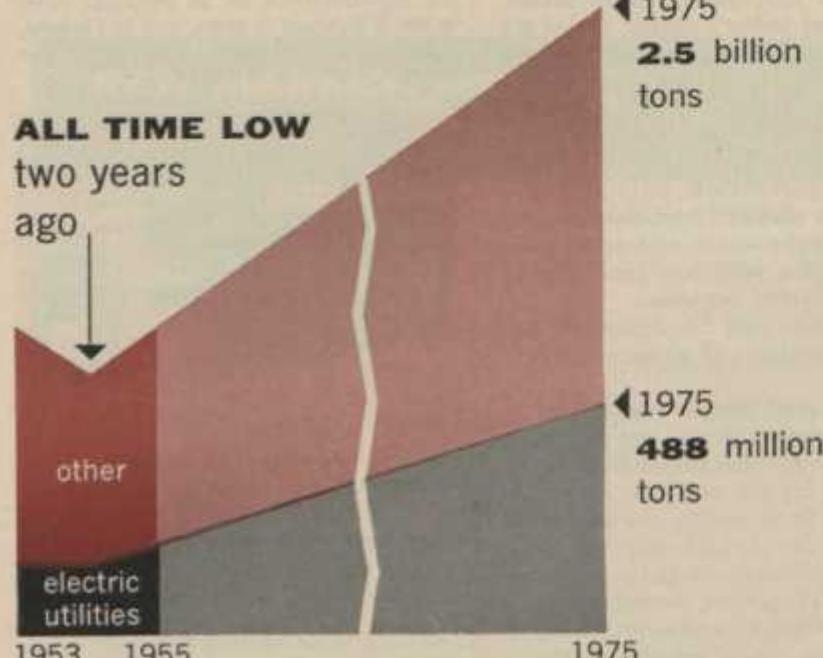
Hearings were held by the House special study subcommittee in July, and more sessions are scheduled in seven states before Congress convenes. According to its chairman, Rep. Ed Edmondson of Oklahoma, the intent of the subcommittee is to cover such matters as industry problems, recent developments and new uses, as well as research possibilities. The investigation "should do much to establish government policy in this field," according to Mr. Wormser. But, he has said, "The impetus to bring this great resource to a realization of its full promise must be supplied, of course, by the industry itself." A broad government-industry research program might well be enacted as a result of the Congressional study.

One phase of such a program, if distant fuel needs are taken into account, could center on synthetic fuels.

Synthetic fuel required to replace only five per cent of the 1952 gas and petroleum demands would take more than 100 million tons of coal. "Intensive research is required to reduce the costs of gaseous and liquid fuels from coal to shorten the time at which coal will become a competitive raw material," says the Bureau of Mines.

One recent estimate of the investment necessary to convert coal to oil and meet 1965 demand lists

ALL TIME LOW two years ago



these ingredients: More than \$4 billion (in 1952 dollars), 2.5 million tons of steel for plant construction, about 200,000 tons of coal a day and about 25 million tons of oxygen a year. From 1965 to 1974, the estimate calls for: \$37 billion in capital investment, 22 million tons of steel for new plants, 1.9 million tons of coal a day additional, and about 750,000 employees. All these estimates depend on no major factors upsetting need projections.

Government-run demonstration plants experimenting over the past 10 years or so have proven that both oil shale and coal can be transformed to liquid fuels, but not yet at economical prices. Some \$80 million went into the projects.

Synthetic fuels, ranging from heavy fuel oils to aviation gasoline, can be extracted from coal by three processes: carbonization (baking) of bituminous, which produces tar and light oil; hydrogenation (treating with hydrogen under heat and pressure) of high volatile bituminous, lignite (a lower form coal) or coal tar; and a treatment of a type of coal gas with the gas-synthesis (known as Fischer-Tropsch) process in which hydrogen and carbon monoxide of the gas unite to make a liquid.

Experimental work has also been done for several years on underground gasification of coal. Over-simplified, this is a process for breaking up the coal, partially burning it underground and retrieving the gas to use as energy above ground. The Bureau of Mines also has been working with the Atomic Energy Commission on another idea: using nuclear energy to supply the heat for gasifying coal.

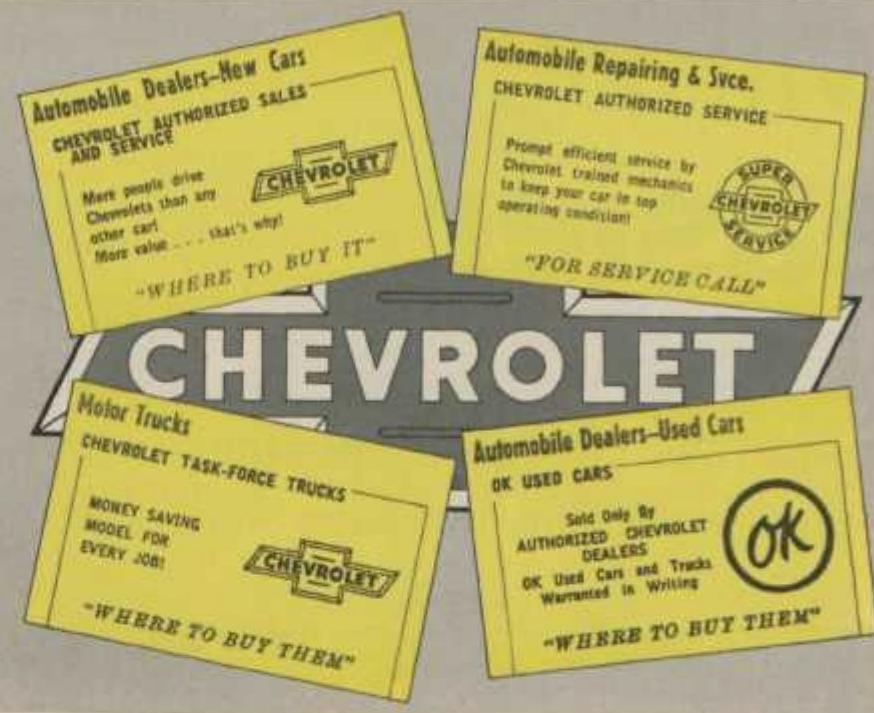
Drafting a future research program will not be easy what with industry's limited funds and disagreement on areas that should be probed, the shortage of technical government personnel, and the objection of some research organizations to undertake federal contract work, since discoveries become public property.

The National Coal Association has suggested, in view of the diversified interests, both in industry and government, that Congress consider setting up a federal agency like the Atomic Energy Commission and with industry representation to administer coal research.

The proposed agency, as envisioned by the industry, would have the power to call on all research branches for advice. It would be given funds for grants, contract work, matching aid or loans to conduct research for meeting the needs of the public, industries concerned and consumers.

END

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THIS YEAR'S income tax forms will be easier to fill out than last year's. And the next year's may be even simpler.

The form packaged with instructions is on its way to you now.

Since mid-September, these tax "packages" have been streaming from the Government Printing Office in Washington to Internal Revenue Service distribution centers in Kansas City and Lawrence, Mass. There, a label bearing your name and address was pasted on a package tailored to your needs—short form,

long form, or special assortments of forms for businesses, farmers, those who can be expected to make declarations of 1957 estimated income.

By Dec. 19, the last mailbag full of the addressed packages will be on railroad sidings, waiting transfer to mail centers all over the country. Between Christmas and New Year's Day, the bag containing your form will arrive at your local post office, and about Jan. 2 or 3, your mailman will contribute his bit to your case of postholiday letdown.

When you open the package you

will find that, for the first time the instructions are arranged to follow the form line by line. Previously, they were on a broad, subject-matter basis. At the same time, many of the lines of the form have been revised to include a reference to a particular section of the instructions.

Uncle Sam is trying this year, more than ever before, to lead you by the hand as you figure out how much you must contribute to his support.

You'll also find that the typography in the instruction booklet has been completely revamped in an effort to make it more readable. And it starts off with a special four-step preliminary outline telling various groups of taxpayers how to attack the return forms. On the forms themselves there have been a few small changes in the direction of simplification, in addition to added references to the instruction pamphlet. For example, on the form covering the tax on the sale of capital assets, the computation of gain or loss has been trimmed from eight operations to four.

These changes are the work of a special Internal Revenue Service task force under the direction of a young ex-coal miner and revenue agent, John McGuire. The experts in Mr. McGuire's Forms and Instructions Section, aided by an advisory committee recruited from throughout the Revenue Service, study the tax returns and instruction pamphlets, constantly seeking ways to lighten the taxpayer's task.

Mr. McGuire and his associates admit the simplification achieved in this year's forms is slight. And, although they promise to continue their efforts to streamline the forms of future years, they are not optimistic of success. In fact, the main problem they have faced in the past two years has not been finding ways to simplify the return but rather to find space for the extra material required by recent changes in the tax laws.

Revenue Service officials feel—and most congressional experts and many private tax lawyers and accountants agree—that not much more can be done to simplify the return unless the tax laws themselves are simplified. The forbidding complexity of the forms, they argue, reflects the special relief provisions Congress has put into the laws to aid special groups of taxpayers—retired persons, stockholders, working mothers, people with big medical bills. Not only do these relief provisions require extra space on the returns; frequently, they are among the most complicated to follow.

For example, the 1954 congressional overhaul of the tax code gave

NEW METHOD HELPS TAXPAYER

Director John McGuire and his IRS task force revised instructions in this year's tax package to follow the tax form line by line



stockholders both a deduction and tax credit on some of the dividends they received each year; that added a third of a page to the tax form. The 1954 law gave retired elderly persons a special deduction of part of their pensions, interest, and other retirement income; another two thirds of a page was consumed. New or changed provisions affecting working mothers, heads of families, sick people and other groups of taxpayers complicated the form still further.

In addition to enlarging and complicating the return itself, all these provisions required a lot of explaining in the instruction booklet. Since the size of the total tax package is limited by the capacity of the government printing presses, space for instructions on the new provisions had to be squeezed out of space previously given other provisions.

Mr. McGuire and his men would like to simplify the 1040 form sharply. But they've worked over it so long and so often that they feel there isn't a line now that isn't required by law or needed to guide the taxpayer. Many tax lawyers and accountants agree that further simplification in the return pretty much depends on further simplification of the law.

Declared one prominent Washington tax attorney: "Many of the complicated portions of the return, such as those for retirement income or capital gains, are there for a purpose. They do a lot of people a lot of good. You can't simplify the return without taking away the good these special provisions do."

"It's a complicated tax structure," said another tax lawyer in New York City, "and so inevitably it's a complicated return. If Congress decides to levy one rate of tax on the sale of property and another rate on dividends, if it makes special provisions for people with big medical bills or wives who have to hire people to look after their babies while they themselves work, then there just can't be a simple return. I think the Service has done about as much streamlining as possible with the laws we now have."

Said a leading public accountant: "Sure, some of the forms, like those on capital gains and business income, are complicated. But in the final analysis, the people who fill out those questions are a small minority of all taxpayers. For the average taxpayer, who has his wages and maybe a few dividends, and who wants to itemize his deductions and that's about all, it's not really a bad return if he'll give himself a little time to read the instructions and think. Too many people let it slide until the last minute, and then try to



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SIMPLE TAX

continued

whip it out under pressure without reading the instructions. So they blame Internal Revenue for a complicated form."

Two key tax-writing committees of Congress are already studying possibilities of simplifying the laws themselves.

Representative Wilbur Mills, Arkansas Democrat, has appointed a top-level group of lawyers, accountants and former Internal Revenue Service employees to advise his House Ways and Means subcommittee on tax law simplification, along with other matters.

Meanwhile, the staff of the House-Senate Internal Revenue committee is working on a similar mission under instructions from Senate Finance Committee Chairman Harry Byrd, Virginia Democrat.

These committees may face rough going in their simplification efforts because so many of the law changes required for simpler returns would also involve some pretty important changes in basic tax policy.

For example, persons under 72 must now reduce any retirement income credit they claim by the amount of money they earn from part-time work. It would obviously make a simpler return if taxpayers could take the full retirement income credit regardless of their earnings, but that would involve a considerably costlier type of tax relief and would be quite a policy change.

One line of attack on complicated tax returns being studied both at the Capitol and at the Internal Revenue Service would reduce greatly the number of people using the 1040 long form. The idea is to increase the use of the short, punchcard form,

or perhaps even eliminate all returns for large segments of the taxpaying public by permitting them to pay their taxes simply through the withholding process.

Form 1040A which has been used in the recent past by some 12,500,000 to 14,000,000 taxpayers a year, has been revised this year to give the taxpayer the option of figuring out his own tax. Previously, anyone using the short form had to leave the taxfiguring job to the government, which promised to compute the lowest possible tax due and either bill the taxpayer or send him a refund as promptly as possible.

Some people, the government realized recently, like to know the good or bad news immediately. Moreover, many people reportedly feel that if they're entitled to a refund it will come more quickly if they compute their own tax bill.

Therefore many taxpayers, even though entitled to use the short form, have been using the longer one. The government experts think that perhaps another 3 million to 4 million taxpayers will now use the short form, since they are being permitted to figure their own tax on this form, too.

The government is also analyzing the returns of all other nonbusiness taxpayers to see what minor law or regulation changes might be needed to clear the way for still more people to use the short form. Mr. McGuire thinks it possible that as many as another 20 million taxpayers could use the short form without major tax policy changes.

Still another plan considered in the Treasury and on Capitol Hill from time to time—one that is still under discussion—would do away entirely with the need for tax returns by persons whose entire income, except perhaps for \$50 or \$100, is cov-

ered by wage withholding. Under this plan, the familiar W-2 form, on which employers report amounts withheld from wages for social security and income taxes, would be considered the individual's tax return.

But this and other major simplification steps in the tax returns and tax laws are still in the future. Right now, government printing presses, operating on a round-the-clock basis, are turning out 40 million of the form 1040 instruction book packages and 61 million of the form 1040A.

These jobs are almost finished. But some 105 million so-called flat forms—the extra forms you pick up at your local bank, revenue office or other distribution point—are now also coming off the presses at the rate of a million a day, and will continue to do so through mid-February.

All these forms and packages in a single stack would be 500 times higher than the Washington Monument. It requires 150 box cars to take them to the two distribution centers. The flat forms, which go directly to district revenue collectors for further distribution, call for another 40 box cars. The whole program requires 88,641 mail bags, 56,710,773 mailing slips (sorting them is a 67,000 man-hour job), two tank cars of ink, untold barrels of glue . . . and so on.

This all adds up to a major mathematical project for most taxpayers, to some extra revenue for lawyers and accountants, and, around early April, to a fine source of joke material for radio and TV comics. It's become part of the American way of life to complain about the annual income tax return chore, and certainly it's true that the chore has in recent years become increasingly complicated for many taxpayers.—CHARLES B. SEIB & ALAN L. OTTEN

TAFT-HARTLEY CHANGES *continued from page 27*

result, Congress provided in Taft-Hartley that NLRB give priority to charges of secondary boycotts and certain types of jurisdictional disputes, and that it seek a court injunction immediately on finding that there is reasonable basis for issuing a complaint. In the more than nine years of Taft-Hartley, NLRB has obtained 148 injunctions against secondary boycotts; courts declined injunction requests in 34 instances.

NLRB also may seek an injunction, at its discretion, to end an unfair labor practice of any kind by either an employer or a union. The Board has obtained 17 such injunc-

tions; one was denied. Labor has support from President Eisenhower, as it did from Senator Taft, for making all injunctions discretionary.

As to the secondary boycott itself, President Eisenhower condemned it as "indefensible." But he is willing to permit certain union practices in the face of stiff opposition from employers who complain that Taft-Hartley does not effectively control secondary boycotts. They are pressing Congress to plug what they consider loopholes.

President Eisenhower has proposed easing the secondary boycott ban by permitting certain kinds of

secondary activity by unions against employers who, in a sense, are not looked upon as neutral parties.

He would permit union action against an employer who takes work farmed out by an employer involved in a strike or other labor dispute—work he would not normally get.

He would also permit action against a secondary employer such as a general contractor who is engaged jointly in construction work on a single project with the primary employer whose workers a union may be trying to force to join up. Such contractors would be treated as a single employer, in which case action

against either would be primary, not secondary.

Justification for the latter view has been expressed this way: A union general contractor who subcontracts part of the job to a nonunion specialty contractor is not in a neutral position; he is responsible for the consequences of his action. Many will debate this view.

Some contractors whose employees are not union members are currently having difficulty in connection with subcontracting work on some military projects. They are being pressured into hiring union men, usually by strikes or threats of strikes which sometimes persuade a general contractor not to do business with a nonunion subcontractor.

Mr. Meany contends that by engaging in what he calls "secondary activity" labor is exercising its "right to engage in activity for mutual aid and assistance."

He says that the President's proposals do not do all that is claimed for them, and might even restrict some union activity now permitted, such as picketing or striking for bargaining rights.

In its secondary boycott objectives, labor wants Congress to eliminate restrictions in Taft-Hartley which prevent workers from: 1, refusing to work on, or handle, struck goods; 2, refusing to work for an employer doing business with a non-union employer, or, 3, refusing to work alongside nonunion employees.

Major objectives of employers also fall into two categories.

The first is closing loopholes in secondary boycott restrictions.

At least six loopholes have been pinpointed by a Special Committee on Secondary Boycotts functioning in the U. S. Chamber of Commerce:

- Taft-Hartley does not cope effectively with so-called "hot cargo" contracts which require an employer to agree in advance not to do business with any firm the union may consider unfair.
- It has been interpreted to permit roving pickets who, having a grievance with a manufacturer, follow his products to the point of sale.
- It attempts to restrict coercion of employees of secondary employers, but does not restrict union pressure on the secondary employer himself.
- It restricts coercion with respect to groups of employees but not on employees individually.
- Pressure, to be illegal, must be brought on the employees "in the course of employment"; it seems to be within the law to coerce workmen into not beginning work on a job.
- The law does not protect air-

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TAFT-HARTLEY

continued

lines and railroads subject to the Railway Labor Act or agriculture.

A bill sponsored by Sen. Carl T. Curtis, Republican, of Nebraska, seeking to close some of these loopholes, was introduced in the last Congress and will likely be brought up again. In introducing it, Senator Curtis said, "Next to violence, the secondary boycott is the most vicious weapon used by union bosses."

Employers will also fight for survival of state labor laws.

Some supporters of Taft-Hartley would cite this as really the crucial issue. It was indeed that in the last Congress, when labor lobbyists, convinced that any revision of Taft-Hartley would include a so-called "states' rights" amendment, lobbied successfully against any amendments at all.

The problem: Except for right-to-work laws, which have specific Taft-Hartley sanction, most state labor laws have been rendered ineffective to deal with labor-management issues because of court holdings that the federal government has preempted the labor relations field. Therefore, state laws must yield to the federal statute in industries affecting interstate commerce.

This has been held to be the case not only where state laws and Taft-Hartley conflict, but also where the state and federal laws are parallel.

The problem of state vs. federal authority extends beyond the labor-management field and has been highlighted prominently with regard to state laws on sedition and racial discrimination.

President Eisenhower has told Congress that Taft-Hartley should be amended to make clear that the states are not deprived of the right to deal with emergencies endangering the health or safety of their citizens, and that jurisdiction between federal and state governments in labor-management relations should be clarified.

Pervading employer opinion is that Congress did not intend to nullify state laws which were not inconsistent with Taft-Hartley; that the line between federal and state jurisdiction with respect to unfair labor practices should be clearly defined, with the states having a definite area of authority, especially with respect to matters that are essentially local in character.

Business groups supported a bill in the last Congress which would make clear that, unless Congress expressly provided that a federal law was to supersede state laws on

the same subject, the state laws would not be invalidated unless there was a direct and irreconcilable conflict with federal laws. It will likely be pushed again.

Thomas B. Gay, former president of the Virginia State Bar Association, told a House Judiciary Subcommittee last year that decisions of the U. S. Supreme Court point up the need for clarifying the relationship between state and federal statutes. In five cases, he said, the highest court allowed state laws to stand; in six, they were knocked down on the ground that federal legislation had pre-empted the field.

Upheld were Wisconsin laws dealing with mass picketing, intermittent stoppages and violence in labor disputes; making it a misdemeanor to strike in public utilities; and requiring approval of compulsory union membership contracts by a two-thirds vote of employees. Also upheld was a Virginia law under which a court awarded damages for tort liability incurred in the course of a labor dispute.

Nullified, on the other hand, were a Florida law requiring labor organizers to register; a New York law recognizing unions of foremen;

One basic cause of failure stems from beginners looking for employment instead of work.

—Shannon Fife

two Wisconsin laws relating to bargaining units and unfair labor practices; and Pennsylvania laws authorizing injunctions in labor disputes and outlawing sedition.

Last month an Idaho statute banning secondary boycotts was declared invalid.

The Supreme Court currently is considering the application of state laws from another viewpoint. That is, whether a state law may be applied when NLRB declines to exercise the authority of Taft-Hartley because an employer or an industry is too small, or is local in character, or for other reasons, even though the business affects interstate commerce.

NLRB two years ago established standards, or yardsticks, which it applies in determining whether to assert its authority on businesses local in nature. The standards cover retail stores and restaurants, public utilities, transit, transportation, radio and television, telephone and telegraph operations. For each group, a specific dollar volume of business must be done in interstate commerce before NLRB will step in.

Employers and unions are on both

sides of this question in three cases pending in the Supreme Court.

In the Fairlawn Meats case, involving three meat markets in Akron, the union has appealed to the Supreme Court, contending that the state of Ohio had no right to use its law to enjoin picketing in the absence of federal action.

In California, the state court gave Valley Lumber Co. relief from illegal union activity, taking the position that Congress intended for the states to apply their laws when NLRB declined to use Taft-Hartley. The union has appealed.

In Utah, a manufacturer of photo equipment, Guss Co., has appealed to the Supreme Court a finding by the State Labor Board. The company contends that the state cannot act in situations where the federal board has jurisdiction even though it declines to exercise it.

Less controversial Taft-Hartley issues likely to come up include:

► Whether to tighten restrictions on spending of union funds for political purposes. A pending Supreme Court decision involving the United Automobile Workers will have some bearing on this issue.

► Whether employer-run welfare and pension plans, usually insured, as well as union-controlled welfare funds in which abuses have been found, should be required to give a financial accounting to a federal agency, and which agency. There seems to be general agreement on some kind of welfare fund legislation with emphasis on public disclosure, rather than control or regulation.

► Whether signing of noncommunist affidavits, now applicable to union officers, should be extended to officers of companies that use NLRB, or dropped entirely.

► Whether boards of inquiry in national emergency disputes, now limited to reporting the facts, should be allowed to make recommendations for settlement.

► Whether approval of a strike by secret ballot of affected employees should be required before a strike can be legal.

► Whether to modify or eliminate the provision in Taft-Hartley under which a so-called economic striker loses any right to his job if he is permanently replaced while on strike.

Obviously the worker has a big stake in what Congress does. He has many protections under Taft-Hartley, and is making good use of them, against unfair tactics of both employers and unions. Workers, in fact, file more charges against unions than employers do.

During all of Taft-Hartley, indi-

viduals have filed almost 60 per cent of the charges against unions and slightly more than 31 per cent of the charges against employers.

In the past fiscal year, individual workers filed 807, or about 46 per cent, of the unfair practice charges lodged against unions, and 1,298, or about 37 per cent, of similar charges against employers.

Until last year, the proportion of charges filed against unions by individual workers had risen steadily from 33 per cent in 1951 to more than 60 per cent in fiscal 1955. The proportion of charges by workers against employers, on the other hand, never exceeded the current 37 per cent ratio except during the first year of Taft-Hartley.

The worker is vitally and directly affected by what happens to right-to-work protection because loss of it might cost him his job if he refused to join a particular union.

His job and availability of work is involved in the fight over secondary boycott restrictions. An effective secondary boycott could keep him from his job, keep materials from reaching his workbench, and keep the product of his work from reaching consumers.

Amendment of Taft-Hartley to require strike ballots could keep him from being caught in a strike which he and his fellow workers did not want.

Basically, the law is for the worker's protection, either as an individual or member of a group interested in collective bargaining.

During 21 years of the Wagner and the Taft-Hartley Acts, workers have voted for a union bargaining agent in 63,348, or 75.5 per cent, of 83,885 elections. Of 12,463,398 votes cast, 9,744,693, or 78.2 per cent, were in favor of unions.

The percentage of elections favoring unions has dropped to slightly more than 65 per cent. Union organizers are finding the going tougher, and the pickings smaller, as they try to sign up workers in remote areas, in smaller businesses, in offices and in other places where unionism has never had much appeal.

Legislation on welfare funds seems to have the best chance of getting through, possibly as separate legislation.

Other Taft-Hartley amendments of a corrective nature, such as some proposed by the President, may get through if the intensity of feeling on both sides with respect to compulsory unionism, secondary boycotts, and state labor laws can be abated and some basis reached for adjusting past viewpoints without sacrificing principles. The prospect of this is not good.

END



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HOW THE WHIPSAW WORKS . . .

one-year seniority



Auto workers drive for 52-week guarantee, while

steel workers drive for one-year seniority



52-week guarantee

BUSINESS faces two threats in the future development of private employment security plans which were introduced in the automobile industry last year as management's answer to long-standing labor demands for a guaranteed annual wage:

1. Steadily increasing cost of supplemental unemployment benefit plans, usually referred to as SUB, for those companies which already have them.
2. Spread of various types of employment security plans to other businesses in the industries where they have already taken hold and to other industries as well.

Employers will recognize a similarity in this outlook with the trend which followed the introduction of employer-financed pension plans in basic steel in 1949. There is a similarity, also, in the plans themselves.

Both SUB and pension plans require accumulation of large money reserves and both supplement federal and state social security programs which labor feels do not provide what it considers adequate benefits.

Employment security plans are tied in with unemployment compensation; pensions are tied in with old-age insurance. There is also a trend, strong in pensions and beginning to show up in variations of SUB, to make them more independent of government benefits.

Business already is pouring money into the funds at an annual rate of \$200 million for the 2 million workers now covered, mostly in the automobile, automobile parts, steel, aluminum, rubber, glass, can and farm implement industries.

About \$130 million already accumulated will build up to a level of more than \$500 million under present maximum funding schedules. The funds are mostly being held in cash or general U.S. Government bonds so as to be quickly available should unemployment hit.

Automobile and farm implement funds will account for \$400 million of the total. Steel funds will accumulate about \$65 million; rubber, \$20 million; aluminum, \$15 million; glass, \$14 million.

The developing employment security plans vary in many ways, thus giving unions opportunities for trading one benefit for another and whipsawing employers into providing more benefits than were included in the pioneer, foot-in-the-door plans won in the early stages.

Variations include amount of employer contribution, size and duration of benefits, employee qualifications for receiving benefits, relation to unemployment compensation, tax requirements and other aspects.

A variation easily becomes a target for the union that doesn't have it, and can spark a trend.

Two basic types of plans have developed:

1. **SUB**, the original insurance-type plan negotiated between Ford and the United Automobile Workers and at present the most common.

Under SUB, the employer pays so much an hour per employee into a common fund. From this fund a qualified unemployed worker receives a benefit which, added to state unemployment compensation, will come to about two thirds of his take-home pay when working. To get a supplement, the worker must qualify for unemployment compensation from his state. He can't be on strike and must be registered with the state employment service as a job seeker.

2. **Security Benefit Plan**, an individual savings plan with a vested fund earmarked for each employee. Introduced last year by Libbey-Owens-Ford and Pittsburgh Plate Glass in agreement with the then-CIO Glass Workers Union, this is commonly called the glass plan. It has been accepted by some companies in other industries.

Under SBP, the employer contributes to an individual account for each employee. With certain limitations, the employee may draw from the account when he is laid off or ill. Any excess over \$600 in his account is to be set aside for extra vacation pay. When the employee leaves his job, what's left in the fund is his. Thus, under SBP every employee, whether laid off or not, will, sooner or later, obtain all the money the employer contributes into his fund.

Walter P. Reuther, who negotiated the first SUB plan as president of the United Automobile Workers, has been critical of the glass plan because it operates on an individual basis rather than through a pooled fund from which benefits go to those who need them. SUB is more in line with union principles of group action and group participation. Individual accounts, UAW officials feel, "help those most who need it least."

As a result of pressure from Mr. Reuther, glass union leaders are now preparing to demand a combination of SUB and SBP when glass industry contracts expire in 1958.

The glass plan has an advantage to employees. Ohio, one of four states which have disapproved simultaneous payment of SUB and state unemployment compensation, has approved simultaneous payment of benefits under the glass plan. Reason: Money contributed by the employer into the employee's individual account is treated as wages. The ruling was made at the request of Eaton Manufacturing Company of Cleveland, which had negotiated a glass-type plan with Mechanics Educational Society of America, a formerly independent union now in AFL-CIO.

A variation of the glass plan has been installed by another Cleveland employer, General Motors' Euclid Division. It is called the Euclid Plan and is considered significant because the five-cent contributions are paid only out of current or past profits and are, therefore, tax exempt as part of a qualified profit-sharing plan. There is no limit to the size of the individual funds comparable to the \$600 limit in glass.

The Euclid Plan pays not more than six hours' base wages weekly in addition to state unemployment compensation. Eligibility for state benefits must be maintained until after they are exhausted; after that, the plan pays 20 hours' wages weekly. Duration of payments is limited only by the balance in the individual account.

A few plans also have been negotiated which differ widely from either the automobile or glass plan, usually because of special industry conditions.

Examples:

In the sugar industry, a plan of California and Hawaiian Sugar Refining Corporation has no trust fund. From the third to 27th weeks of unemployment, the company simply pays a laid-off worker an amount sufficient to total 65 per cent of take-home pay when added to unemployment compensation. Length of service is not a factor.

In the construction industry, some contractors employing bricklayers and carpenters utilize a stamp plan, called the Oakland Plan. The contractor puts in the employee's pay envelope special stamps with a face value

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LAYOFF PAY *continued*

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In shipping, the National Maritime Union has negotiated a plan under which the employer contributes 25 cents a day per employee into a trust fund. When laid off, a sailor draws \$30 a week from the fund if he is not eligible for state unemployment compensation; \$15 a week if he is. Benefits are paid up to 13 weeks.

Some pressures may develop to group small companies in a joint guarantee plan, such as happened when pensions were evolving. One such plan has been under negotiation in Detroit with members of the Automotive Tool & Die Association there.

Employer contributions into employment security funds range from three to 10 cents an hour per employee covered, but seem to average about five cents. That is what the automobile industry contributes for about one million workers.

Steel pays three cents an hour for each of 650,000 employees, with a contingent liability of an additional two cents until steel industry funds reach maximum levels. Aluminum pays the same for 100,000. Rubber and can companies are also putting in three cents for 100,000 and 35,000 employees, respectively. There is also the Oakland Plan's 10 cents an hour and the shipping companies' 25 cents a day.

The first increase in employer contribution has occurred in glass. When the three-year glass industry agreement was signed in 1955, it provided for payment of five cents an hour for each of the 23,000 employees into their individual security benefit funds.

The agreement further provided that, at the end of the first year, last September, the workers would have their choice of a five-cent hourly wage increase or an additional five cents an hour into their benefit funds. They chose the latter, so that now the two major glass companies are putting 10 cents an hour, or about \$200 a year, into the fund of each employee.

This 10 cents an hour will stand as a target for other unions to shoot at in seeking changes in their plans from other employers. Additional input will then be made the basis for insisting on additional output in the way of more benefits which later might require still larger employer contributions.

Benefits paid to unemployed workers under the security plans are also going higher and being promised for longer periods as new plans come into being.

The first SUB agreements, in automobiles, provide for benefits of 65 per cent of take-home pay (including unemployment compensation), with a maximum of \$25 from the fund, for each of four weeks after the first week of layoff. For the next 22 weeks this drops to 60 per cent. (Actually, the automobile funds will not be large enough to qualify any employee for the full 26 weeks of benefits during the three years of the contracts, which expire in mid-1958.)

The first change was won by UAW itself in an agreement with Allis-Chalmers assuring private and state benefits totaling 65 per cent of take-home for the full 26-week period.

The United Steelworkers of America won its first SUB plan from the American and Continental Can companies, in the fall of 1955. This plan assures 65 per cent of take-home for 52 weeks instead of 26 weeks. The same terms are in steel and aluminum plans negotiated this year.

Under the can companies' plan, however, employees must have three years of continuous employment, and meet other minimum hours-of-work requirements, to qualify.

This limitation, according to W. A. Lacle, general manager of industrial relations for Continental Can, effectively excludes most, if not all, seasonal employees. The impact, naturally, would be less than in the automobile

industry, where employees qualify for benefits after only one year of employment, or in steel and aluminum, where the requirement is two years.

What will happen, likely, is that UAW will press for the can-steel-aluminum 52-week guarantee in automobiles, and the steel workers for the automobile plan's one-year seniority for can, steel and aluminum employees. Little regard will be given to the fact that workers with a 52-week plan must meet stiffer seniority requirements than those with a 26-week plan. That's whipsawing.

You can see one way it can happen in UAW's recent settlement with Aluminum Co. of America. Alcoa's plan for 18,000 workers in 23 plants follows the 52-week pattern in steel because the United Steelworkers represents these employees. Along comes UAW and gets the same 52-week deal for 4,250 employees it represents at four Alcoa operations. UAW can be expected to use what it got from Alcoa as a wedge in trying to get the same 52 weeks from auto companies.

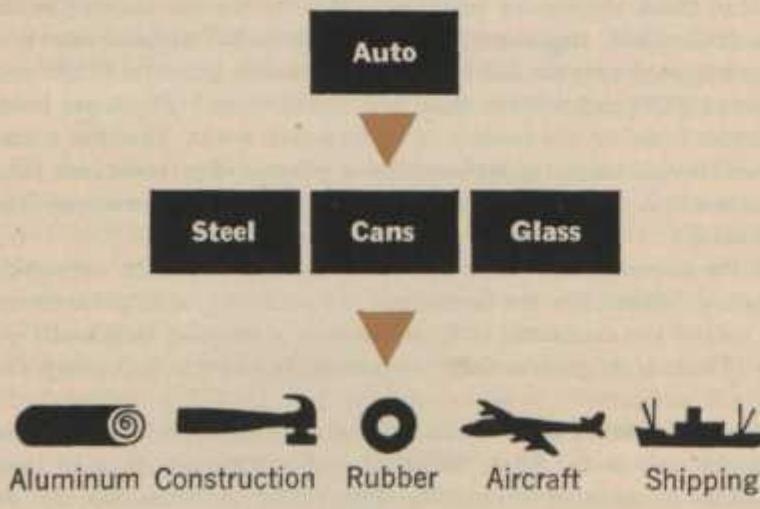
Mr. Reuther's goal: Full take-home pay for 52 weeks. He has proclaimed this to union rallies, but neither union nor management bargainers think he will really press for it in 1958 when three-year automobile contracts run out. The feeling is, however, that Mr. Reuther will take serious aim at a benefit ratio around 75 per cent of take-home.

This proportion would exceed the two-thirds ratio which was considered appropriate when unemployment compensation came into being 20 years ago; a level which would not destroy the incentive to seek another job, yet permit living on a minimum scale.

Payments out of SUB funds vary, depending largely on the employee's take-home pay and on the amount of state benefit which must be supplemented. A deficiency in the size of the fund normally limits the duration of payments, but not the amount of each payment.

The average supplement needed to provide 65 per cent of normal pay has been surprisingly small. Figures from the automobile companies show that, in the initial few months of their fund payouts—first of their sort in

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LAYOFF PAY *continued*

TWO PLANS DIFFER FROM BASIC TYPES



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SHIPPING PLAN

Employer pays 25 cents per day worked into reserve fund. Laid-off sailor draws \$30 a week if not eligible for state unemployment benefits; \$15 if he is

the country, beginning last June—the supplemental benefits averaged about \$10.50 a week at one company, \$12 at another, and almost \$15 at a third.

During the first four months Ford made 41,690 payments totaling \$621,306. The 65 per cent payments for up to four weeks averaged \$14.99, the 60 per cent payments after four weeks to a few employees averaged \$9.77.

Admittedly, figures thus far available are not broad enough to predict average, longer-term levels. The reason is that layoffs of men qualified for SUB payments have not as yet been in any general and average geographical patterns.

A worker laid off in Michigan, for example, has drawn relatively little from the SUB fund because unemployment compensation scales in that state are high. Conversely, a Missouri auto plant worker has drawn much less from the state, and a good deal more from the SUB fund.

Geographical dispersions of this sort account for the differences in average payments by companies with identical plans.

Consider, for example, an average auto plant employee. He earns about \$94 a week, and (being average) has a wife and two children. His take-home after taxes is about \$84.

During his first four weeks of idleness, under the Ford-type plan, he would be eligible to draw 65 per cent of his take-home pay in state and SUB payments. This would be \$54.60.

If that man is employed in Missouri, he draws \$25 a week in unemployment benefits from the state. Consequently, he would draw from the SUB fund the maximum of \$25 more toward \$54.60 during the first four weeks. After that he would still draw the \$25 maximum, because 60 per cent—the ratio after four weeks—of \$84 would be \$50.40.

However, in Michigan, that same man's state benefit payment would be \$48. His SUB draw during the first four weeks, therefore, would be only \$6.60, bringing the total to \$54.60. After that it would be reduced to \$2.40, for a total of \$50.40.

In actual experience in recent weeks, laid-off Missouri workers of one auto company have drawn an average of \$22.92 a week from the SUB fund. About half of those eligible for SUB benefits drew the maximum \$25. In Michigan, meanwhile, the average draw has been \$11.91, and less than one per cent have drawn the \$25 maximum allowable from the SUB fund.

Duration of SUB payments is fixed on "credit units." These are bookkeeping entries based on the number of weeks a man works. In autos, a man of less than 10-year seniority accumulates a quarter of a credit unit for a full week's work; a 10-year man gets a half-unit. The maximum accrual is 26 such units.

In steel the accumulation is at a rate of one-tenth unit for each eight credited hours (essentially the hours that are paid for), with a maximum of 52. In rubber the maximum is 26, accrued at a rate of a half-credit per full week. Thus, both steel and rubber accrue one credit unit every two weeks.

Benefit payouts cancel these credit units at rates that are based on seniority and the size of the fund. In autos and rubber the effect of these involved tables of values is to limit the duration of payments, but not the amount. In steel the primary effect is to limit both the amount and the duration.

The mechanics of fund payout are largely patterned after the Ford example in autos. Briefly stated, an applicant for SUB payments must appear at the plant to apply for benefits each week, and must present within stated time limits a proof that he has qualified for state unemployment compensation. In autos, an actual showing of the state UC check has been almost invariably deemed the only satisfactory proof.

Eligibilities always start with seniority. The auto and rubber plans require one year, steel requires two, can three. Strikes within the plant nullify

eligibility for benefits, and in steel this is somewhat extended—strikes outside the plant, under certain conditions, also invalidate eligibility. There are other varied stipulations as well.

The glass plan is somewhat simpler. All regular employes (meaning all except temporary men) participate. Although the employe cannot draw benefits if his layoff results from a strike within the bargaining unit, or as a disciplinary measure, he is otherwise eligible when layoff, sickness or accident occur. He can draw up to 10 per cent of his benefit account balance, but not more than \$30. The minimum is \$15 or the account balance, whichever is less.

Once a man's fund reaches \$600, the 10-cents-an-hour credits continue, but are added to the man's vacation payment rather than put into his benefit account.

Administrative costs are paid by the fund receipts in autos and rubber. The company pays them in steel and glass. Administration is usually by the company, but questions regarding SUB eligibility are customarily settled by joint management-union boards.

The automobile plans were contingent on approval of supplementation by states in which at least two thirds of the covered employes worked. This condition has been met with respect to agreements between major automobile companies and UAW.

Taxpayer suits challenging state approval of SUB integration with unemployment compensation have been rejected in lower courts of Illinois and Connecticut, but the courts did not decide the direct question of legality.

In Illinois, two employers who filed suits as individuals and taxpayers were denied the right to sue on the ground that they had not demonstrated that their property rights were in jeopardy. The judge held that the impact of simultaneous payments could not be judged until payments were made and there was some experience with SUB plans.

In Connecticut, an employer association which filed suit was found to have no standing in court because it was not a taxpayer.

Opponents of SUB contend, among other things, that private layoff benefits are in fact wages, that a person receiving them is not really unemployed, and that to pay him benefits out of state funds discriminates against the unemployed worker who is not covered by SUB and must deduct from his state benefit any part-time earnings. They also assert that state legislatures, in passing unemployment compensation laws, did not intend to provide state benefits to persons receiving a similar benefit from private sources.

All the plans specify alternative procedures in states which rule that supplemental fund payments are wages, and that their distribution invalidates eligibility for UC benefits. Four states—Indiana, North Carolina, Ohio and Virginia—have so ruled, with Indiana also having ruled against the alternative procedures. Twenty-seven states and the District of Columbia have approved joint payments. So has Canada.

The alternative procedures generally provide that a man will draw the state benefits and let his SUB payments accrue. Sometimes the plan provides that he will be paid those SUB accruals in a lump sum when he is called back to work. In other arrangements he draws state benefits for a term of weeks—two or three or four—and in the subsequent week draws all the SUB benefits accumulated for the preceding weeks.

At this point the state laws present an impossible problem for only two unions, in one company, General Motors. The GM contracts with the AFL-CIO electrical and rubber workers follow the language of the UAW-GM and UAW-Ford plans, in that states having two thirds of the total employment involved must approve integration before the plan can become effective.

The overwhelming share of GM employes under the contracts work in Ohio, which has invalidated the integration idea. Consequently, the IUE contract for SUB payments at General Motors will lapse in 1957 unless the



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LAYOFF PAY *continued*

situation changes or some alternative program is arranged. Meanwhile, the five cents an hour input goes on.

The private employment security plans were made contingent on certain government rulings with respect to wages and taxes as well as supplementation with unemployment compensation.

Required, and obtained in the automobile plans, was a ruling from Wage-Hour Administrator Newell Brown that the companies' contribution into the SUB fund is not part of the regular rate of pay for computing overtime under the wage-hour law or part of the basic rate under the Walsh-Healey Public Contracts Act. A further requirement was a ruling by the Internal Revenue Service that the companies' contributions are currently deductible expenses for income tax purposes.

IRS ruled that the contributions are deductible from gross income as ordinary and necessary business expenses. The ruling applied to the specific plan to which companies committed themselves in their labor contracts. Companies embarking on similar plans would be wise to submit them for specific tax-deduction approval.

IRS later ruled that the benefit payments out of SUB funds, under the automobile plans, are not wages subject to income tax withholding or to social security and unemployment taxes. However, they are income to the employe receiving them and must be included in the employe's total income when computing his 1956 income tax next spring.

Still under consideration by IRS is the question of whether income earned by the SUB funds is taxable.

There are important differences in the tax aspects of the glass plan. While contributions into the individual employe funds are deductible from gross income as an ordinary and necessary business expense, as in the automobile plan, IRS has ruled that the contributions are supplemental wages to the employe at the time they go into his fund.

Therefore, according to IRS, the contributions are income and thus subject to, 1, withholding tax (which the employe must pay), 2, unemployment compensation tax (which the employer must pay), and, 3, social security taxes (which both share equally). The glass plan provides that tax deductions will be made from regular wages so that the contribution to the fund, now 10 cents an hour, will not be reduced.

IRS ruled further that the individual employe accounts are separate trusts and therefore any income they might earn are not subject to tax.

As to where unions will press next for unemployment benefit plans, the most logical nearby targets are the smaller companies in the industries already invaded and companies in other industries which bargain with a union that has won SUB elsewhere.

SUB moved into aircraft a few weeks ago, for instance, via UAW, which bargains at Goodyear Aircraft Corp. The parent company, Goodyear Tire & Rubber, has a SUB plan with the Rubber Workers' Union.

The small auto suppliers, the fabricators and the mechanical rubber goods shops also can expect to be tackled.

One mass production industry where SUB has hardly made a dent is electrical manufacturing. The International Union of Electrical Workers has long been demanding SUB plans, but they are momentarily blocked by five-year contracts with General Electric and Westinghouse. Action in that sector will have to wait contract openings well in the future.

Beyond that, one labor economist feels that SUB plans will inevitably spread into production shops of all kinds that face recurring layoff problems, either seasonal or cyclical.

The International Association of Machinists, with many of its 900,000 members in small shops, is just beginning to move toward SUB. Delegates to its recent convention resolved to "press forward militantly" for weekly wage guarantees.



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IAM officers, however, seem to be more interested in seeking larger state unemployment benefits, something union leaders are not overlooking in their drive for private supplements. In fact, unionists look for support for increasing state benefits from any employers who might feel it will reduce the demand on private funds because the proportion of supplementation making up the 65 per cent of take-home pay will be less.

What can happen instead is what happened in pension developments. When social security pension payments were increased, unions insisted that the increase be added to the total pension, usually \$100 a month, which included social security; the company's share was not reduced. Now the trend is toward more private pensions of specific amounts in addition to, and irrespective of, social security. The IAM executive council's report to the convention stated that the workers' "hope for assistance lies only in improved government-administered unemployment insurance."

"It would be a grave mistake for unions to conclude that the introduction of a private supplemental unemployment benefits plan does away with the need for improving the existing public unemployment compensation program," the report continued. "It must be remembered that benefits resulting from privately negotiated plans are only a fraction of the unemployment compensation received by workers from the state."

The report concluded: "The unemployed workers can only achieve adequate economic security through improved government-administered unemployment insurance." —STANLEY H. BRAMS

Twenty-seven states and the District of Columbia have authorized concurrent payments of supplemental unemployment benefits and state unemployment compensation:

Alabama	¹ Georgia	Missouri
Arizona	Illinois	New Jersey
Arkansas	Iowa	New York
California	Kansas	North Dakota
Colorado	Kentucky	Oklahoma
Connecticut	Louisiana	Pennsylvania
Delaware	¹ Maryland	Tennessee
District of Columbia	Massachusetts	Washington
Florida	Michigan	Wisconsin
	Minnesota	

Four states have barred SUB payments concurrent with unemployment compensation:

Indiana	Ohio
North Carolina	¹ Virginia

Four states have approved concurrent payments from individual "security benefit" funds, as in the glass industry plan, and unemployment compensation:

California	Ohio
Michigan	West Virginia

¹ By legislative action; others by administrative rulings or opinions.

Source: Bureau of National Affairs, Inc.



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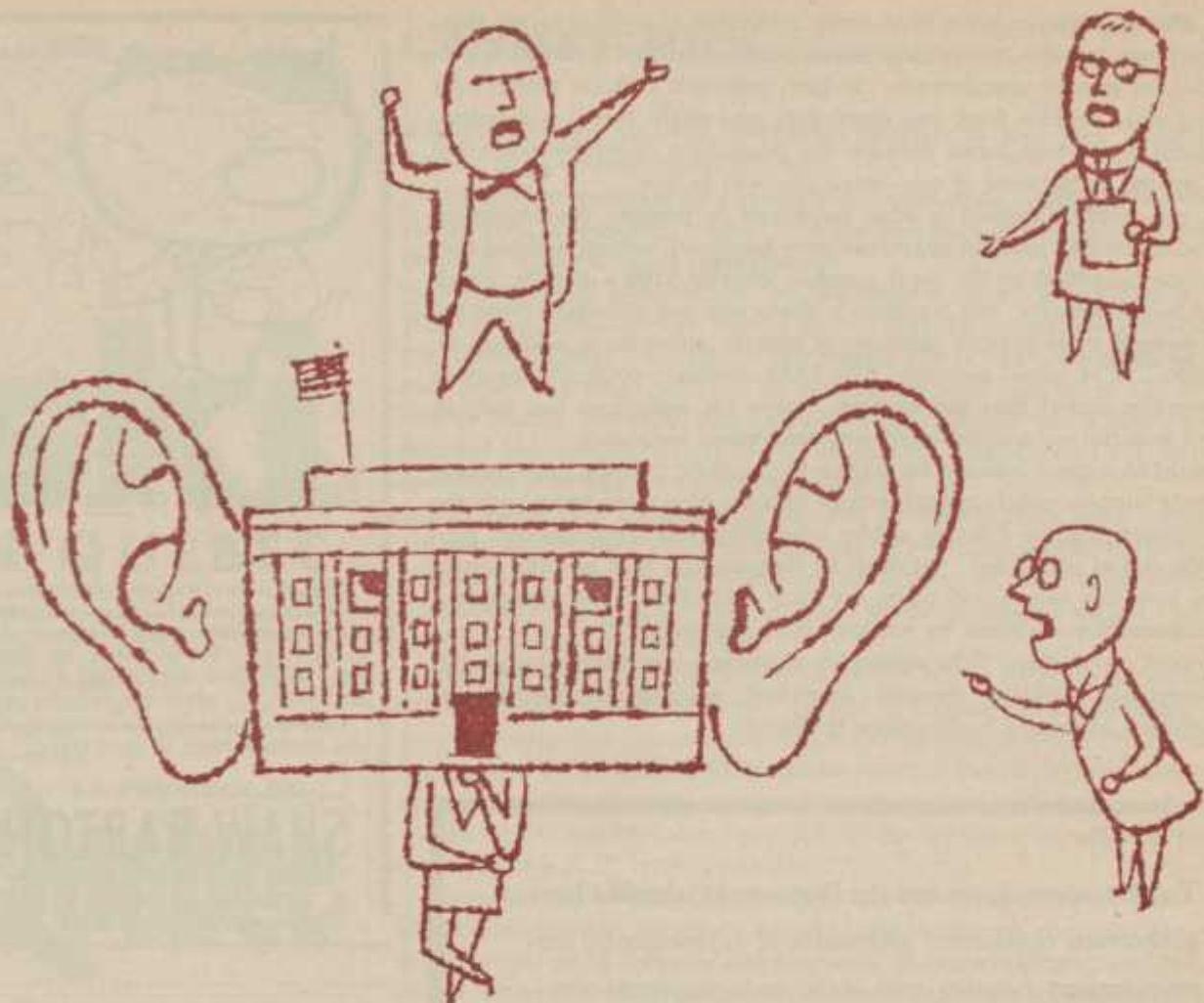
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Quick facts about the National Chamber

I. Through the Chamber of Commerce of the United States, the business men of America bring their combined leadership to bear on the solution of national problems—and fulfill their responsibility for keeping the country strong, prosperous and free.

II. The National Chamber is a federation of 3,300 local and state chambers of commerce, trade and professional associations (with an underlying membership of 1,800,000)—and 21,000 business firms and individuals.

III. The Chamber works to accomplish six basic aims:

1. To increase consumer purchasing power by promoting government efficiency and economy, and making sound tax cuts.
2. To create greater harmony between labor and management.
3. To lift living standards by increasing pro-

duction, developing new markets, providing more jobs, expanding the economy.

4. To raise educational standards, and to build a better public understanding of free enterprise.

5. To help build better cities and communities by combating urban blight and planning for the future.

6. To keep local, state and national organizations of business men strong, forward-looking and increasingly useful.

IV. At its Washington headquarters, the Chamber maintains 24 departments devoted to studying economic and legislative developments; determining, publicizing and explaining the recommendations of business on national issues; and serving its members.

V. To work in close partnership with its members, the Chamber maintains six Division Offices and 17 Divisional Operational Centers. Trained field men help affiliated organizations set up and conduct leadership workshops, industrial development conferences, legislative meetings, urban development conferences, economic discussion groups.

\$7 MILLION

continued from page 29

for a program conducted within the Navy.

"Dollarwise," he said, "contract training might show up well, but the quality of training, no."

He added that, in any contract operation, he believes the contractor would do the minimum required by the contract.

The Army's attitude toward contract flight schools was expressed when the requirements for large cargo helicopters were increased. Maj. Gen. Paul D. Adams, former head of Army operations and training, told a subcommittee of the House Committee on Appropriations during Army hearings:

"Since contract training of cargo helicopter pilots can be conducted by civilian institutions at considerable savings, and would parallel the system now used by the Air Force for their primary fixed wing pilot training requirements, it is considered that this means of accomplishing the training should be utilized.

"Available Air Force experience and studies," General Adams said, "indicate that it is more economical to conduct this training by such contract.

"The primary flight training—which is just learning how to fly an airplane and before the military aspects of flying are introduced—can be done quite well by the civilian flight training schools."

Rep. Daniel J. Flood of Pennsylvania asked if the training was just as good.

"Yes, sir," said General Adams.

The first Army helicopter course conducted by private enterprise will begin next Jan. 7. New classes of approximately 50 students each will enter every four weeks. Training for about 700 a year is planned.

The contract (for \$890,215) was awarded to the Southern Airways Company of Atlanta, Ga. Training, with about 65 civilian instructors, will be conducted at Camp Wolters, Mineral Wells, Tex.

Southern Airways was one of 66 firms solicited for proposals on the helicopter pilot training school. The company's proposal was one of 21 made by 16 different firms.

William J. Graham & Son of Pittsburgh and Marianna, Fla., was given the contract (for a little less than \$2.4 million) to train Army airplane pilots at San Marcos, Tex. The first class of 100 students will arrive in January. New classes will start each three weeks. The Army expects to graduate about 1,275 new pilots annually in this contract operation.

A flight training program for Reserve Officers' Training Corps students, both Army and Air Force, will also get under way during the 1956-57 school year. Next year the program will be enlarged. College students in 180 Air Force and 40 Army ROTC training units will be offered flight training.

Civilian instructors will teach the college students. In most cases the training will be handled by contract schools cooperating with the universities. About 20 universities, however, have their own facilities and already offer flight training as part of the regular college curriculum. They will enlarge their programs to take care of ROTC students.

An estimated 1,625 Air Force ROTC students will get beginning flight training during the current school year. The program will be stepped up to about 4,300 next year. The Army plans to train about 400 this year and about 800 a year beginning in 1957-58.

Each student will receive 35 hours of instruction in small airplanes, as well as classroom instruction in subjects associated with aviation.

Cost per student will vary from \$430 to \$455 for the entire flight course. Total cost of these programs for the first year is expected to come to about \$865,000. Eventually the government will be paying civilian schools about \$2.1 million a year for ROTC flight training.

The Department of Defense states the purpose:

"The new flight training courses will . . . permit an earlier screening of the cadets' adaptability for flying while still in student status."

The training of military pilots by civilian specialists was first conceived in 1939. At that time the Army Air Corps had only 21,556 officers and men. A small group of civilian aviation school operators was called to Washington. These barnstormers, shouted the skeptics, could never train military aviators.

Results astounded everyone. By 1944 the Air Corps, later to become known as the U. S. Air Force, had almost 2.4 million officers and men. Civilian instructors were turning out military pilots at the rate of 110,000 a year, and setting safety records while doing it. In that year of peak training only one fatal accident occurred for every 43,478 hours of flight in the primary program. A year later the ratio improved to one for every 63,000 hours flown.

The Air Force has estimated that the privately operated contract schools saved \$250 million a year.

After World War II, with more pilots than could be kept on active duty, the program was discontinued, but not permanently. The matter of civilian instruction was studied continuously. Military planners wanted to know: Does contract pilot training afford in the present situation or in future emergency similar advantages as to efficiency, cost, and mobilization potential as were manifest before and during World War II?

A study by the Stanford Research Institute provided some of the answers. On the basis of the Stanford study and surveys of its own, the Air Force revived contract schools in 1951.

Today nine civilian schools train all new Air Force pilots. They are: Anderson Air Activities, Malden, Mo.; California Eastern Aviation, Inc., Mission, Tex.; Beiser Aviation Corp., Marana, Ariz.; Garner Aviation Service Corp., Bartow, Fla.; Pittsburgh Institute of Aeronautics, Marianna, Fla.; Hawthorne School of Aeronautics, Moultrie, Ga.; Serv-Air Aviation Corp., Kinston, N. C.; Southern Airways School, Bainbridge, Ga., and Texas Aviation Industries, Inc., Hondo, Tex.

Each contract school has about 700 civilian personnel, 130 of whom are flight instructors. About 20 USAF officers and 15 airmen are based at each school. A comparable military operation at Good-



Civilian instructors help Air Force save taxpayers millions of dollars

fellow Air Force Base—now closed—required about 2,100 military personnel.

The flight student gets 140 hours of air training and 240 hours of academic training.

Under contract, each base operator is reimbursed for allowable operating expenses and is provided a flat fee per flying hour, ranging from about 65 to 95 cents. Each contract is renegotiated and amended to meet changing requirements.

Average net profit after taxes is about \$32,000 a year per school, according to a new study by the Aeronautical Training Society, a national organization of flight school operators. Average net profit is 1.75 per cent of gross receipts before taxes, or .864 per cent after taxes.

Cost to the government averages \$8,872 per student—called by the Air Force “perhaps the greatest training bargain in history.”

Propeller-driven training planes—similar to those used by the Navy—are used for the primary stage. After primary, students go on to other bases where military instructors continue their training in jets or multi-engine planes, with emphasis on the military aspects of their assignments.

Beginning in 1958 a small jet trainer will be used in the primary flight stage. The plane, a Cessna T-37, provides side-by-side seating for student pilot and instructor. Although slow for a jet aircraft (310 mph) it will provide—at considerably lower cost—the training necessary for easy transition to speedy jet and rocket aircraft of the future.

The Aeronautical Training Society explains some of the advantages of the contract program.

“A major key to the success of the contract schools,” the association says, “—aside from the fact that civilian enterprise can use industrial methods to a larger extent than can any purely military setup—is the civilian flight instructor.

“He averages about 33 years of age, is married, has a home and children. He is a professional flight instructor because he likes to instruct. To him the task of converting recurrent batches of fledglings into airmen is not a repetitive bore but an interesting, challenging task.

“Because of him and the other civilians, the Air Force sends only a small military detachment to each school for supervision.

“As a result of this use of civilian know-how and employees—many of whom are beyond combat age—the Air Force is saving the taxpayers millions of dollars a year and is making available thousands of airmen in places where they can serve more usefully.”

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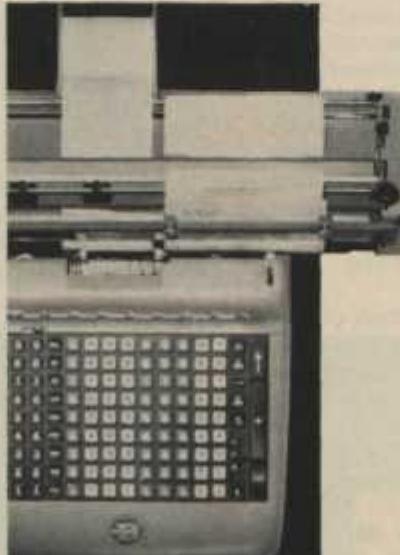
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MANAGEMENT IS A 3-PART JOB

Here are the principal executive tasks and how to perform them

AN EXECUTIVE by himself is of no importance whatever.

A scientist, an inventor, a trial lawyer, an artist or a composer may make valuable contributions to society purely as an individual through his own creative efforts. But an executive has value only in relation to an organization.

His personal work production is important only to the extent that his job requires him to wear two hats—to function as a technical specialist in sales, engineering, finance, merchandising or some other field as well as a true manager.

Whatever additional duties he may have, the *executive task* remains the same. Essentially, it is *influencing others to cooperate toward some goal which they come to find desirable*.

Thus your success in the role of manager ultimately depends on the time, energy and skill which you apply to human relations.

This analysis of the executive task comes from Frederick G. Macarow, a thoughtful, articulate businessman who has studied the art of management from the inside during three decades of managerial responsibility in the American Telephone & Telegraph Co.

Mr. Macarow, who started out with A. T. & T. as an engineer, is now a senior vice president (for operations and engineering) and director of the Chesapeake and Potomac Telephone Companies. This \$800 million corporate complex is one of the larger units of the Bell system, serving Maryland, Virginia, West Virginia and the District of Columbia.

As a writer, lecturer and former president of the Washington chapter of the Society for the Advancement of Management he has earned a reputation among professional scholars of management science as a man with a rare gift for distilling from his own wide experience the lessons which executives of any organization can profitably use in improving their own performance as managers.

To operate effectively as an executive, Mr. Macarow believes, you must first understand the distinctive role assigned to you in modern business organization. There is general recognition now that management is an art unto itself, entirely separate from any of the technical specialties which fall under its supervision. Many efforts have been made to define the management task by listing various functions which executives perform. But such lists usually tend to consist of such sweeping generalities (i.e., "an executive makes decisions") as to be of little practical benefit to the manager who is seeking a deeper insight into his job.

Mr. Macarow divides executive functions into three broad categories which apply to all levels of management from the top down to the first level of supervision:

1. Analyzing and planning. At the top, this means

laying out the company's long-range objectives and the broad policies which will be followed in pursuing those objectives. At lower levels, it means adapting company plans to the operations of your particular department or unit, so that it will make the greatest possible contribution to the over-all mission.

Most so-called executive decisions—whether they be top management decisions on such matters as financing and diversification, or a supervisor's decisions on output rates or sales quotas—fall into this category. This is the function which executives understand most thoroughly and which they are least likely to neglect.

2. Organizing. The executive is responsible for setting up and staffing the organization necessary to carry out the company's (or his unit's) objectives. It is important to remember that this is not something that is done once and for all at the beginning of operations.

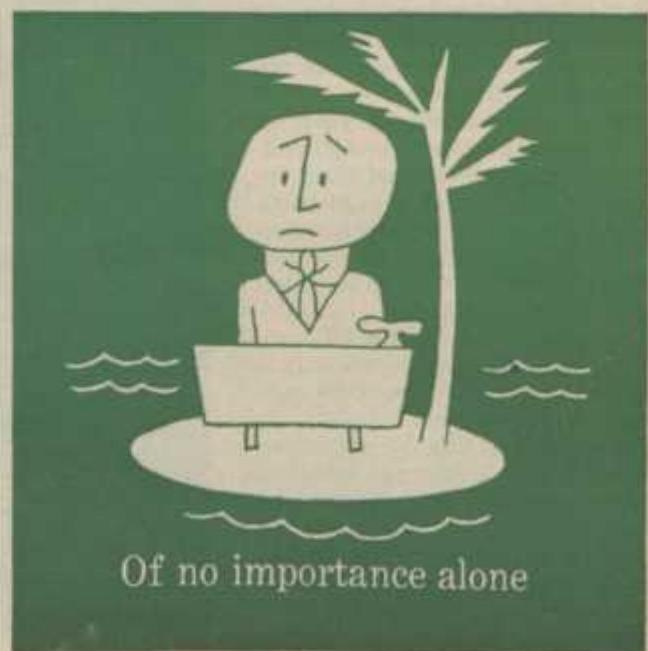
A good manager constantly reviews his organization, particularly when expansion or other changes have taken place. He looks for ways to delegate real authority as deeply into the organization as feasible while maintaining proper coordination and control. He concerns himself not only with the structure of the organization, but with the selection, training and assignment of the individuals who man it. Most executives recognize this as one of their functions, although some are inclined to underrate its importance.

3. Making the organization function effectively. This is the one indispensable, never ending task of managers at every level. It involves much more than issuing orders and supervising their execution.

"It means transmitting throughout the organization the objectives, the ideals and the decisions of higher management; getting those decisions understood and accepted; and persuading all members of the team to work effectively toward the consummation of those objectives."

Without this dynamic, day-to-day leadership of the human beings who make up an enterprise, the wisest management policies and the best organizational structure will fail to produce results. Despite its overriding importance, this is the executive function which is least understood and most often neglected.

Since do-it-through-others, rather than do-it-yourself, is the hallmark of executive action, it follows that a manager should give top priority to understanding people and why they act as they do.



Of no importance alone

This lesson was impressed upon Mr. Macarow many years ago when A. T. & T. placed him in charge of an experiment in improving service. A major problem of the telephone companies before the advent of the automatic dial system was getting central operators to answer calls in approximately the same order as they came in, so that no subscriber was kept waiting unduly long for service. Careful records were kept of the number of switchboard lights that remained on for less than 10 seconds, for longer than 30 seconds, and so on.

In an effort to help operators identify the calls which should get first attention, company engineers designed a new kind of switchboard on which any light which had remained on for more than 10 seconds automatically began to blink insistently.

The new equipment was installed at Providence, R. I., for a trial run under Mr. Macarow's supervision. Executives were confident it would produce remarkable results, and it did—but they were precisely the opposite of what was expected. After three weeks of blinking light operation, records showed a sharp rise in the number of calls going unanswered for more than 10 seconds and for more than 30 seconds.

"I felt sure that the records must be wrong, so we ran the whole test over again," Mr. Macarow recalls. "The results were the same. It was only then that I did what I should have done in the first place—I asked the girls who were operating the switchboard why the new system wasn't working. The first operator I interviewed gave me the answer.

"When a light starts blinking," she explained, "We know that it's already a black mark on the record. So we just ignore it and concentrate on the others where we've still got a chance to beat the 10-second deadline."

The system quietly juked the blinking lights.

Mr. Macarow remembered the Providence experience when, some years later, he was assigned as traffic manager for a large city where telephone service had been seriously impaired by a long period of labor troubles culminating in a bitter strike. A new contract had been signed with the union but the morale of the supervisory staff was shot and the service efficiency index had dropped from the 98 per cent which Bell regards as satisfactory to less than 60 per cent. Management figured it might take as long as five years to work the standards back up above 90.

This time Mr. Macarow decided to consult the people on the firing line before drawing up a plan. He called all his district supervisors to a series of informal meetings. Instead of telling them anything, he asked them what they thought was wrong, and what should be done about it.

These sessions turned up a few suggestions for top management action, but for the most part the supervisors simply pointed out to themselves their own opportunities for improving service. Mr. Macarow then repeated the technique with chief operators and finally with assistant chief operators, the lowest supervisory level. All agreed on one thing. Many of the difficulties were due to supervisors' losing contact with workers. This contact had to be regained.

He had expected these conferences to help him to prepare a long-range plan for raising the efficiency index, and to insure the acceptability of the plan on lower levels. But he was amazed at the actual results. Within four months of his first bull session with the supervisors, the index had shot back up to the 90's. The very process of consultation had solved the problem and no further plan was necessary.

From these and many similar management experiences, Mr. Macarow has reached several firm conclusions about exercise of the leadership function.

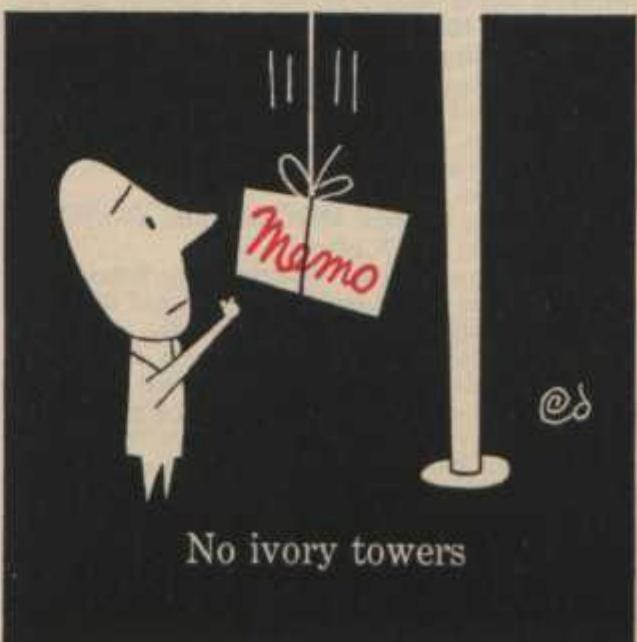


A prime responsibility of every executive is to keep the channels of communication open—up, down and across.

This means keeping yourself thoroughly informed about the policies of higher management and the plans of those on the same echelon with you who head other divisions or departments of your firm. If you don't know, ask. It is dangerous to assume that you will always be told all that you need to know to mesh your own operations intelligently into the over-all program.

Listen receptively to your subordinates—they are closer to many of the problems than you are and they can save you from serious blunders if you make it clear that you really want to know how it looks from their end.

Make sure that those above, alongside and below fully understand your plans and decisions, and how they relate to the company's mission. Next to his religion and his family, a man's job has more impact on his life than anything else. He wants to know what is going on and why, and how it will affect him. You can tap a tremendous reservoir of cooperation by tak-



MANAGEMENT IS A 3-PART JOB

continued

ing advantage of the opening to men's minds which their natural curiosity affords.

In discharging this responsibility for effective internal communications, Mr. Macarow says, there is no substitute for close contacts with people.

"You cannot lead your organization by sitting in an ivory tower and lowering instructions out of the window. You want to transmit your own ideals, your own concepts of the job to be done, your own determination to reach the goal, to the people on whose performance you must depend for success. You can do this best in face-to-face conversation, where the warmth and drive of your personality come through, and where the reactions of the other person are instantly available to you. It is difficult to do with words written on a piece of paper.

"I sometimes think that the interoffice memorandum is the greatest enemy of managerial efficiency. The executive who would rather write a note to a subordi-

"Finally, after weeks of work, a quarter-inch-thick report was delivered to the president. It gave full details of all the aptitude and intelligence tests that were used, all the sources of manpower that were tapped, what percentage of applicants were able to make the grade, the cost of the hiring program, and all the reasons anyone could think of to explain why this was a fine system.

"The boss took one look at it and almost strangled. 'All I wanted to know,' he said in a pained voice, 'was where I should send a neighbor's young son, who was interested in a summer job. It doesn't matter now—he's gone back to college.'

Getting out and talking to people has the further advantage, Mr. Macarow says, of showing your subordinates that you are personally interested in them and in what they are doing. "This may sound like a simple and obvious thing, but its effect on morale and output can be remarkable."

How remarkable was demonstrated, by accident, in a test conducted at the Hawthorne plant of Western Electric Company at Chicago.

Company researchers wanted to find out what effect increased lighting would have on the efficiency of certain types of close-work operations. They picked a group of telephone relay assemblers for the test, and explained to them that they were simply to continue working as they always had, with no conscious effort to speed up their output. The intensity of the light in the work room was then gradually stepped up, day by day. The output of the unit rose each day.

Technicians were ready to conclude that more light equals more production. But one wise executive, who had been dropping in every day to observe the progress of the test, had a hunch.

"Reverse the procedure now," he said. "Reduce the light a little each day but don't tell anyone."

The technicians did—and output continued to set new records.

"Those relay assemblers weren't responding to more light," Mr. Macarow says. "They were responding to attention. Their increased production was the result of the greater interest which they took in merely performing a hum-drum mechanical operation."

Mr. Macarow does not recommend that all executives go around tampering with the light fixtures. But he does believe they should make a conscientious and imaginative effort to help employees at every level realize that their work is important.

This is where the function of "transmitting the ideals and objectives of the organization" comes in.

"If an employee feels that you are interested solely in the company's profits and your own salary and bonus, you can't blame him for being interested only in his weekly pay check. It is part of your job to show him that the company is doing something useful and important for society—whether it is providing telephone service, baking bread, making automobiles or whatever—and to help him see your particular unit and his particular job are making a vital contribution to this mission.

"This is the way—the only effective way—to release the full creative power of your organization's human resources. And tapping that power is the heart of the executive task."

—LOUIS CASSELS

DRAWINGS BY CHARLES DUNN



nate in the next office than get out of his chair and stroll in for a talk is depriving himself of the most elemental tool of leadership, which is friendly personal relationships. He is also inviting a lot of unnecessary misunderstanding."

As an admittedly extreme example of the confusion and waste motion that can result from impersonal communication, Mr. Macarow recalls the actual case of the corporation president who sent this note to the personnel office:

"I would like to know what procedure we follow in hiring people at our X plant."

This memo set off an historic flap. Subordinate managers, unsure what he had in mind and unwilling to ask, instituted a complete review of the company's personnel policies. Recruiting, screening, testing procedures at X plant were compared in detail with those at other installations, and with prevailing practices in the industry.

"More than 300 hours of consultations were held at various levels," Mr. Macarow says. "Scores of reports were written. Every aspect of the subject was explored. There was even a long argument over whether the company's policy should be to look for outstanding employees or merely above-average qualifications.

REPRINTS of "Management is a 3-part job" may be obtained for 10 cents a copy or \$7.50 per 100 postpaid, from Nation's Business, 1615 H Street N.W., Washington 6, D.C. Please enclose remittance with order.

GIANT HOUSE HUNT

continued from page 48

buy suitable new property before moving day.

Owners who want to keep their old dwellings may buy them back from the city at 25 per cent of appraised value, using the 75 per cent difference to pay for a lot and moving expense. However the city wants to prevent the spread of blight. Freeways already built have gone through some of San Antonio's worst slums. Thus only buildings which pass a rigid inspection and meet code specifications may be moved. Others must be wrecked.

California's freeways are state highways and their construction even within city limits is a state responsibility. But the state has been mindful of city problems and acted accordingly. The state sells structurally sound buildings at auction and house moving in Los Angeles has become a multimillion dollar a year business. During that city's housing shortage purchasers who moved houses were required to rent them to existing tenants for a six-month period. In many cases it may take more than a year to accumulate enough land to award a construction contract, so the state rents many houses up to the time the ground is needed.

If you, as a businessman, find that your establishment lies in the path of a future highway, talk over any special problems that a move may entail with appropriate highway officials. They doubtless will be cooperative and helpful to the extent of their ability. They understand that many types of business can't suspend operations for long without loss of customers or of competitive position.

In Los Angeles, for example, a beverage plant's business was dependent on daily delivery to regular customers. It could not stockpile its product for future delivery on any practical basis. Accordingly arrangements were made for it to stay in operation on right of way land until a new plant had been built and was ready for production. Similarly, in Denver, highway officials worked out arrangements with a food processing plant that permitted uninterrupted production at the old site until a new factory was ready to go.

With less than 400 miles of urban freeway opened to traffic to date and thousands more to be built, additional cities are becoming aware of what's ahead. Family and business relocation promises to become a vital municipal function during the next decade.—NORMAN KUHNE

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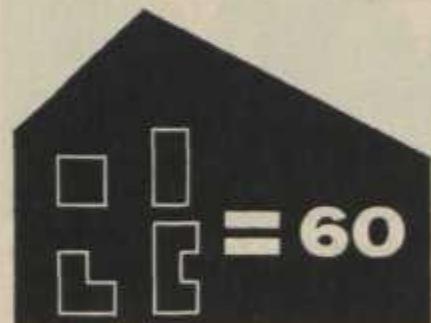
NEW TECHNIQUES PROMISE BETTER LIVING

Home-builders have developed methods to match today's progress. They still need sounder marketing data

THE home-building industry is learning how to solve most of the problems that plagued it for 20 years and is on the way to solving those that remain.

It has progressed to a point where mass production techniques are being combined with custom design so that the builder can meet the market while keeping the advantages of large scale operation.

This change is important to home-builders—large and small—and to their suppliers and their



New versatility enables four basic layouts to become 60 designs

customers. Its effects are already showing up in city planning, finance, and politics. Indications are that they soon will be even more far-reaching.

These indications suggest that house building of the future may not be a handicraft operation in which one house is built at a time. It may be an operation which includes regional and city planned neighborhood design, skilled landscaping and engineering. It may involve mass production and assembling of precision fitted parts by organizations which think in terms of scientific current market analysis as well as of long-range urban potentials.

New materials, such as plastics, and new ways of handling old material such as brick and lumber will be studied extensively just as other industries experiment extensively today.

American builders are already exchanging State Department visits with Russia and Poland. Ten years ago few builders would have been interested in nor would have understood the significance of such exchanges.

This change in viewpoint is symbolic of the transformation that is going on in the building industry.

Thirty years ago the mass builder erected the housing that he could provide most easily, and the buyer had to take it. The differences between today's houses and those built then are as great as the differences between today's automobiles and Model-T Fords.

House-building in the mid-20's was more or less a hit-or-miss handicraft operation. Subdividers had learned how to secure the right to subdivide a farm and to pay the farmer from the money received as lots were sold. The subdivider ordinarily did not install utilities, or pave the streets. Sometimes he put in sidewalks, but this was not universal practice. Land was considered

subdivided when the lots had been surveyed and stakes planted. The land might then be sold on a contract basis—\$10 down and \$10 a month.

This enabled people with little savings to take the first steps toward owning a home. However, if the subdivision proved moderately successful and people actually started building and moving in, it became necessary to provide utilities, sidewalks, streets, schools and other community facilities. This meant special assessments.

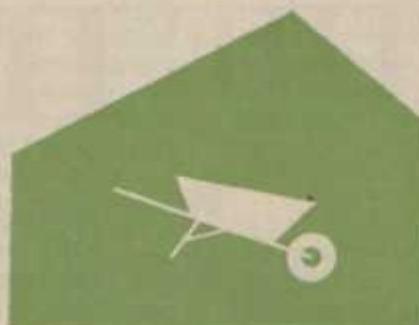
The family which was paying \$10 or more a month on its lot might suddenly find assessments of a size which would require larger payments than the land itself.

Subdivisions were promoted so vigorously that in some communities as many as five or six lots were plotted in a year for every house built. This provided cities with developments which were not digested until the '40's.

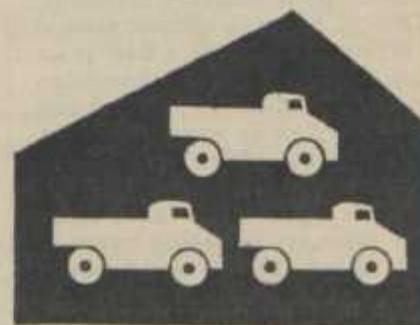
It also resulted in a high volume of foreclosures and a big volume of tax delinquencies.

But when things worked well, and a family had enough equity in its lot to build a house, it usually approached, or was approached by, a builder or a building-material dealer. They agreed on the general design of a house, on its cost, and on its financing. The family knew the general layout it wanted and the general dimensions were agreed upon. The builder or contractor thereupon moved in a small crew, that dug the basement by hand. They mixed the concrete, poured the foundations by hand, the lumber was measured, sawed, fitted, possibly re-cut again by hand, and nailed in place by hand.

There was tremendous waste in the use of lumber; the house might use a good number of pieces of wood 10 feet, 6 inches long, for instance. These would be cut from 12 foot boards. The rafters were at least 2x8's. The joists tended to be correspondingly big. The house may have used 50 per cent more lumber per square foot than would be used



Waste, now carried off in wheelbarrow, used to fill three trucks



in a house of comparable area today. It did this without providing subfloors, or insulation, and very often without providing sheathing. It probably was a sound house, the lumber in it was good, and it was well nailed together, but it was not well designed, engineeringwise or architecturally.

The kitchen was not designed around the work or the steps necessary to the preparation of food and disposal of waste. The bedrooms were not designed around the beds, the needed closet space, or the furniture. Stairs were wastefully located. The bathroom was inefficient in size and use of fixtures. The furnace was likely to be huge and inefficient.

Financing was cumbersome, too. The house might be bought on a land contract basis, in which case the buyer usually did not get title for many years. This practice tended to be more common in states where it was relatively difficult to foreclose and therefore difficult to get mortgage money. If the money was secured by a mortgage, the first mortgage tended to be for a short period only. Often a fee had to be paid for renewals and the note could be called at any time it came due. The cost of this mortgage, including interest and fees, ran from six to eight per cent in many communities. The second mortgage might run from three to five years and, including discounts and fees, might cost 25 per cent per year or more.

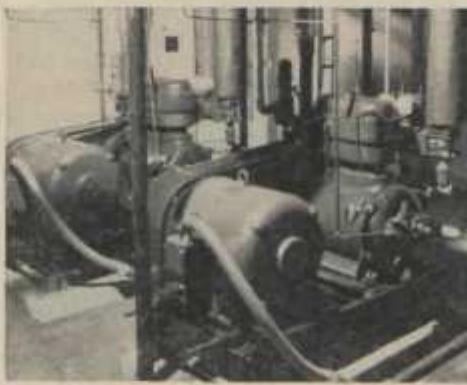
However, housing in the '20's if not the financing, was better than it had been 30 years before. Few houses had adequate plumbing at the end of the 19th Century, practically none had wiring, and the heating was elementary.

Real progress was made in the '30's, though the volume of home-building declined precipitously. Lots were available at low prices. But because family incomes had dropped, it was necessary to cut prices to reach any market at all, and because of the large supply of vacant houses, the new-house market was very competitive. Architects worked on house design during these years, builders learned how to make jigs to reduce job site assembly labor requirements. Engineers found out how to cut material requirements. The Pierce Foundation, which was working on this problem, for instance, found no man familiar with the use of lumber who could design a truss which would span 28-ft. without using wood bigger than 2x4's. The job was given to an airplane engineer who came up with designs which made it possible to use 1x6's or 2x4's instead of the older 2x8's or 2x10's. At



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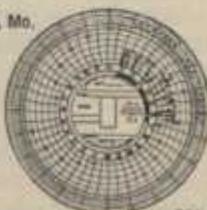
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536-7

HOME VALUES

continued

the same time, architects came forward with designs that made the most of every square foot. They fitted fixtures together to cut the bathroom size to a minimum; they designed kitchens around the equipment, and conducted, or took advantage of, motion studies to locate the equipment to reduce the number of steps to a practical minimum.

This activity reduced costs and improved service per unit of material used and per square foot of space provided.

Similar or greater progress was made in financing.

The Home Loan Bank System was set up in 1932 to strengthen institutions which were providing amortized mortgages. At that time these institutions were primarily savings and loan associations, mutual savings banks, and some insurance companies.

A little later, the Federal Housing Administration was set up to insure amortized loans made by reputable mortgagees, including banks and insurance companies as well as mortgage companies.

Small down-payments and amortized loans became accepted in the mortgage field. It was no longer ordinarily necessary to use an expensive second mortgage or even to pay high fees to get a first mortgage or to get it renewed. By spreading the risk and improving the techniques, the risk factor in mortgage-lending was reduced and the interest rate dropped. By the end of the '30's, mortgage money was commonly available for less than 6 per cent, and in many places for 5 per cent. Because the mortgages were amortized, they were much safer both to the lender and to the borrower.

During and immediately after World War II, the setting again changed. Incomes rose, materials remained scarce, and prices high. The market for housing was large.

As a good proportion of the surplus lots plotted during the '20's had been absorbed, it became necessary to subdivide again. But this time the work was done on a volume basis, and experts were brought in to do it. The Urban Land Institute, formed in December, 1939, had been making studies of the most efficient ways of laying out different types of terrain to get the maximum use of the lot with a minimum utility cost, minimum street requirements and the most pleasing layouts.

Cities required that the subdivisions provide streets and utilities so that special assessments would not

hit the purchaser unexpectedly. Buyers were able to buy land and house together.

In the first years after the war, builders were not pressed to economize, but as the volume per builder reached into the hundreds and thousands it became worth while to operate efficiently. During these years, when the prices permitted them to experiment, builders moved from the handicraft to the assembly-line technique of building. Although the automobile is assembled as it moves down the line, the house is assembled by having one operation after the other pass by it. Power shovels could excavate for one house after another. Forms could be set for one ready-mixed concrete pour-

wall to the other, these partitions can be closet or drawer partitions; that is, walls can be preassembled closet-storage walls.

The efficient builder today plans his work up to a year in advance, buys or options his land long before building, and is responsible for an adequate layout of the community. He may even provide land for schools and churches. He schedules the construction operations and the deliveries just as a manufacturer schedules the production operation and delivery of raw materials. He uses few basic layouts. With four basic layouts, builders can get between 40 and 60 different house designs and elevations. This makes it possible to use the economies of mass cutting and mass assembly without the monotony of one design.

This type of operation permits the builder to demand and obtain standard sizes; he can insist that the windows be the size that will make them an integral part of the frame. He can insist that the doors be prehung. He is even requiring that locks be of a standard size so that it is not necessary to drill different size holes in the doors to install them.

He is able to use large pieces, 4x8 feet or larger, with a fine tolerance instead of small pieces with crude tolerances which must be cut and assembled by hand. He is able to buy plumbing, heating, and kitchen and other equipment at far lower cost than the home-buyer himself.

An increasing portion of the house is factory-made, too. Chimneys, for instance, as well as doors, jams, windows, stairs, plywood, gypsum board, and insulation board are factory made.

These economies were developed by builders as prices continued to rise. They are not reflected in any synthetic building-cost index. The price of lumber per square foot may have gone up as much as the index says. But when the builder is able to carry off waste in a wheelbarrow instead of using three trucks, he has bought far less lumber than he used to. Jigs and repetitive operations reduce the manhours, per square or per cubic foot of house even though the cost per hour is up.

This operation uses highly paid mechanics, but the mechanics no longer function basically with rulers, pencils, handsaws or pipe wrenches as they did 30 years ago. They assemble well made pieces of a finished product.

The advantages being discovered in engineering the house, and in pre-cutting and assembly with use of jigs, offer particular advantages to the large builder, of course. One



New tools, skilled operators, increase production per manhour

ing job after another. Where codes permitted, plumbing was preassembled and set in place, and wiring was preassembled and placed in the panels. Wall panels were made by the use of jigs.

It became a by-word in the industry that if anyone had to use a ruler, profit went out the window.

Panels may be assembled from wood delivered to the site, or they may be assembled in a shed before delivery. The pieces needed for the roof of, say, house number 4-13-Bx, are assembled automatically. Separate orders and separate bills do not have to be made out. At the end of the billing period, the machines report that material for x number of 4-13-Bx houses and y number of 4-13-By houses, were delivered. As the board feet for each of these has been precomputed, one computation takes care of the billing operation.

Similarly, the pieces fit together into jigs and can be nailed by power-nailing equipment without sawing, fitting, or without even much thinking. The trusses, panels, floor, wall, and roof can then be moved into place by power equipment and the house will be weatherproof in a few hours. Floors may even come finished, in which case it is possible to install the partitions quickly. With trusses reaching from one exterior

operator who is now turning out 100 houses a month of one type reports that it took 96 man hours to cut the first house but that it is now taking only 13 man hours to cut the same house.

At first glance it might seem that this would offer a special advantage to the large house builder. This is not the case. Building-materials dealers also are finding that they can set up operations of this sort and supply pre-cut materials to small builders. The small builder can therefore get the advantage of the larger operations. Moreover, he has advantages that the big builder does not have. He does not have a terrific overhead during winter or during slack demand. His small size gives him somewhat better control over the operations he does perform. He knows his men better personally and may be able to get better cooperation and production from them than do larger builders.

He can also make much better use of small pieces of land or even single lots. There are still many lots here and there which either have not been built on or on which existing structures have been or will be demolished. It may be possible to buy them or have a home-owner buy them for less than would be required to develop new subdivisions. The small builder, therefore, performs a real function that the large builder cannot perform and there is some evidence he is more than holding his own.

This ability of the materials dealer to pre-cut standardized houses has been used not only to help small

home-building. A sizable proportion of owners are acting as their own general contractors.

This may be significant. It may offer competition to builders and permit lower-income families to get better houses.

Modern methods are being applied hesitantly to marketing methods, too. As the supply of housing began to catch up with demand, buyers began to insist that they get more for their money, and that they get more of what they wanted. Builders must now study the market. They cannot expect to sell a two-bedroom house easily, for instance. Of the homes built this year, the Bureau of Labor Statistics reports that half have more than one bath. Thirty-eight per cent are brick.

The use of brick has increased 50 per cent in five years. This might, at first glance, seem to be contrary to the trend toward mass producing, mass assembly, large-piece construction. In a sense it is, but, on the other hand, it is in line with the fact that builders must produce what the buyer wants. The buyer wants individuality and prestige. To meet this, brick design has been improved, too, so that some builders can turn out brick houses as cheaply as frame houses.

One side-shoot of this revolution in home-building is prefabrication. Where only a few, or even one house, is to be assembled at any particular location, the prefab operation may prove the most economical. As is the case with conventional construction, the prefab house also can be designed with many variations so that the prospective owner has a wide variety of choices.

We are witnessing a revolution in home building, but like developments in the automotive industry, this one is uneven. We now know how to lay out good subdivisions, how to build efficiently and attractively, and how to finance in a sensible way. But how these new subdivisions can fit into a city as a whole and into the traffic patterns of a city is still a problem. City-planners and engineers have been increasingly frustrated as home-building proceeds. There is, however, a big ray of hope in the new highway program. This should make movement within and between cities much easier and open up new areas for home-building which can be located better in relation to shopping centers, educational facilities, jobs, and other community activities.

The highway program may also make it possible to build both beautiful and convenient residential communities.

Builders still do not have the de-

We like to think of ourselves as strongly individualistic people—and we are—but this national trait is balanced by a remarkable talent for group action. Our business organizations and trade associations are as indigenous to the American business community as codfish is to Massachusetts and catfish is to Mississippi.

—Boyd Campbell

builders but is also facilitating do-it-yourself home-building operations.

Government data suggest that more than 15 per cent of all houses now being built are being erected at least in part by the owners. Many are being built by families with little or no previous experience in carpentry or the other trades required for

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tailed type of area-by-area analysis of types of families buying houses, what they want, and are willing to pay for, which is comparable to the market data available to large industries selling on a nationwide market.

The situation can change rapidly in small localities and therefore builders can get caught more quickly than is likely for manufacturers producing for national markets. They need better market data.

They do have some crude indications of the market. For instance, they have joined with building-material manufacturers to finance a Department of Labor study on trends in home-building. The study for

1956 indicated half of all single-family houses had more than one bathroom, that the average size had gone up to 1,240 square feet for the United States as a whole, to 1,250 for all houses started in metropolitan areas, and to 1,320 square feet in houses started in the Northeast.

This is a big shift from the period immediately after World War II when it was often less than 1,000 square feet.

Builders are just beginning to realize that they as assemblers are in position to tell manufacturers what to produce. They are now beginning to use this power. They are in effect telling window manufacturers, for instance, that they will buy windows

with certain specifications. Manufacturers who will turn out windows of this design are those who are likely to get the orders.

The improvements discussed here have not yet reached all parts of the industry or of the country. But, as the country grows and various communities learn approaches which are more efficient and more satisfactory to the home-owner, these better practices will tend to spread.

While perfection never will be reached in home-building, it is fair to say that home-building is becoming an industry and that builders are becoming recognized as important contributors to society.

—ROBINSON NEWCOMB

SCHOOL SHORTAGE *continued from page 33*

spent for school construction. The construction figure in 1950 was 21 cents.

In 1900 Americans spent \$14 per pupil to educate their children—\$12 for operating expenses and \$2 for new construction.

In 1950 the figure was \$224 per pupil—\$185 for expenses, \$39 for new buildings.

Last year local school districts spent an average of \$337 per public school pupil—\$248 for operating costs and \$89 per pupil for new classrooms.

According to the U. S. Office of Education, Americans are now spending an average of \$380 per pupil to provide public education for their children.

Public school budgets for 1956-57 will come to about \$11.5 billion.

That's up from \$10.6 billion last year, \$9.1 billion in 1954, and \$5.8 billion in 1950.

Public school enrollment is currently about 32.7 million. That compares to 31.4 last year, 29.2

million in 1954, and 26.1 million in 1950.

Looking to the future, Americans can expect about 9.3 million more pupils to be enrolled in 1966 than are enrolled now. Projecting school expenditures ahead, you can look for local school districts to spend about \$20 billion for operating expenses and new buildings.

The Office of Education figures classroom needs on the basis of 30 pupils for elementary grades and 25 per classroom in high schools. On that basis, the enrollment increase since 1952-53 indicates need for 152,700 new classrooms. The 300,000 which will have been built by mid-1957 will reduce the backlog considerably.

While the number of pupils in public schools increased about 3.7 per cent in the past year, the number of schoolteachers increased by 6.9 per cent. The Office of Education says:

"Thus the percentage increase in teachers was greater than the in-

crease in pupils and resulted in an over-all slight reduction in number of pupils per teacher."

The reduction was from 27.7 pupils to 26.8 pupils per teacher.

More than 1.2 million persons are teaching this year in public school systems. That compares to 914,000 in 1950. In the past year, the Office of Education says, more than 75,000 men and women who have been graduated from colleges and universities with specialized teacher education entered the teaching profession for the first time.

In future years the number of persons who enter teaching each year will grow. That's indicated by what President Eisenhower said recently:

"Today, more Americans are receiving more and better education, in better schools and colleges, from more and better teachers, than ever before. The classroom shortage, which grew steadily worse over a long period, has been improving now for the past two years. Last year about 67,000 classrooms were built, more than in any year in our history. More classrooms were built during the past four years than in all the preceding 12."

"The teacher shortage has reached a turning point. The number of students entering colleges for teacher training increased 24.5 per cent from 1953 to 1955. The current shortage of qualified elementary and high school teachers is estimated at 120,000, a reduction of 20,000 compared with the shortage last fall. The position of teachers, the life-blood of good education, is steadily being improved...."

"Under our system, education is basically a community function. It requires the active support of citizens in their own homes."

END

5 MILLION YOUNGSTERS ATTEND SPECIAL SCHOOLS

MORE THAN 5 million American youngsters attend other than public school systems. These include:

Private and parochial schools, 4.9 million pupils; residential schools for exceptional children, 86,200; model and practice schools in teacher training institutions, 81,500; federal schools for Indians, 30,800, and other federal schools, 22,000.

ATOM PROGRAM

continued from page 31

with the Shippingport plant next year."

Shippingport is the nation's one large atomic power plant on which construction is in the final stages, though a number of other plants are now underway. Shippingport will be the first large atomic plant in the world to produce power solely for commercial uses. Britain's celebrated plant at Calder Hall, England, started producing electricity in October but operates primarily to turn out plutonium for military bomb use.

Other prototype plants included in Mr. Strauss' figures will be completed in the period, 1958-1962—mostly in the later years. Meanwhile, AEC is pushing development of experimental reactors of a diverse variety. Most power experts agree that this program holds the most promise of eventually leading to truly economic atomic power.

On June 29 the Joint Committee reported out by a 14-0 vote a version of the Gore bill that was so thoroughly revised it could be called the Committee's own bill. The accompanying report stated:

"The Committee has concluded that, assuming that the private groups achieve their goals and schedules, the current program should be expanded and accelerated."

Main features of the new bill, labeled S. 4146 and H. R. 12061: AEC was directed to construct large-scale reactors and smaller plants supplementary to its current program. The large reactors were to be built only at AEC installations. Their electric power was to be used on the site, not sold publicly. A total of \$400 million was authorized to be spent, presumably over the four years or so it would take to build such plants.

This bill passed the Senate 49-40 but was later killed in the House by being referred back to committee in the closing days of the session. According to Representative Melvin Price (D-Ill.), an active committee member, defeat was due "to a combination of opposition by the Administration, including the AEC; the coal industry, which had an unfounded fear of atomic power as a substitute source of energy; and certain elements in the private power industry."

An important move to safeguard private interests against government encroachment emerged during the crucial House debate of July 24 on the Joint Committee bill. Influential Representative W. Sterling Cole,

Republican from New York and chairman of the Atomic Committee in 1953-54, asked for and obtained House approval of changes that would:

1. Limit construction of small (as well as large) reactors to AEC sites.
2. Insure that AEC would not proceed with a new project until industry was offered the chance to build it first.
3. Direct AEC to sell its power reactors after 15 years.
4. Insure that the new program will interfere with neither present projects nor with the weapons program.
5. Eliminate wording directing AEC to speed up reactor development.

The first three amendments would obviously go far toward calming private interests. The final two were aimed at softening AEC opposition. Observers believe that had all been originally incorporated in the Joint Committee bill, the measure would have passed handily last July.

At any rate, the accelerated program is destined for another go-round next year. Congressman Price makes that clear. He hopes to introduce a bill early providing for a speed-up. Chairman Anderson seconds that intention.

Another key figure supporting faster reactor building is AEC Commissioner Harold S. Vance, chairman of the executive committee of Studebaker-Packard until his appointment to the Commission a year ago.

He analyzes the nation's international obligations to find a middle-ground as follows:

Unlike Britain and Russia, the U.S. has currently no pressing domestic needs for atomic power. The only heavy pressure to make progress arises from foreign policy considerations. Impressed with the hope held out by President Eisenhower's Atoms-for-Peace plan, a host of foreign nations—especially those with high-cost power—are clamoring for atomic powerplants. If the U.S. fails to provide these, others, including the communists, will. Enduring commercial and political ties are therefore at stake.

"I hope," Mr. Vance declares, "that one of the results of [next year's] hearings will be congressional support for an international program on which the efforts and enthusiasm of all of us can be united, that this will be a part of an over-all program which will take nuclear power out of the 'public-versus-private' power controversy... whose sole objective will be the widespread achievement of economic nuclear power at home."

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ATOM PROGRAM

continued

as well as abroad at the earliest possible time."

Two developments reportedly unfolding behind the scenes could mean even wider modifications in the program drawn up by the Atomic Committee and amended by Representative Cole. These are:

AEC itself could ask for an expanded budget to speed reactor building. Electric utilities could come up with proposals to build additional atomic power plants.

Events in this area will obviously prove well worth watching.

Atomic indemnity. The civilian atomic power industry may never get going unless reactor builders and users can obtain protection at reasonable rates against the oversized risks posed by atomic operations. Insurance firms feel they can cover the direct on-site industrial claims arising from reactor accidents. Third-party coverage is the real problem.

If a reactor ran away—a possibility considered highly remote—radioactive materials could be spread over wide areas with devastating results. Damage and injury claims against the companies involved could reach fantastic proportions. Such prospects have dampened the ardor of private industry. Apparently, government alone is big enough to indemnify these operations and dispel doubt.

A bill providing federal assumption of reactor risks was approved by the Joint Atomic Committee last summer. Government would have covered the excess over the amount available from private insurers, up to \$500 million per reactor incident.

The measure was almost universally supported and would undoubtedly have passed Congress but for the debacle over S. 4146. When this reactor speed-up bill failed to pass, the Democratic leadership

allowed the indemnity bill to languish without coming to a vote. Key members still favor holding this vital measure back until industry support appears for some kind of government reactor program. With Democrats again in control at the Capitol, this is more than an idle threat.

Holding company exemption.

Another bill closely tied in with reactor development is designed to allow a company not now subject to regulation as a utility holding company to continue that exemption when cooperating in an atomic power research project. At the end of the research period—that is, when the project enters a commercial operations phase—the exemption would end. So, presumably, would the cooperative arrangement.

There is no serious opposition to such a waiver. Most people see no reason why an equipment manufacturer should be treated as a utility, for instance. Like the indemnity measure, however, a latent threat is that the bill may be sidetracked until a reactor program gets a green light.

Atomic manpower. Some consider technician shortages the biggest single barrier to atomic progress. Yet, what to do about it defies the experts.

AEC may already be taking the soundest approach toward solution. The Commission is stepping up training in its own schools and is engaged in an extensive program to provide other schools with the materials and equipment needed for basic training. Since money alone appears a wholly ineffectual remedy, this may be the best that can be done to increase the pool of talent.

Congressman Price has done heavy spadework in this field and will probably issue a final report on atomic manpower next year. A proposal for a federal scholarship plan is a possibility. The tendency, however, is to let the natural inducement of rising salaries pull students into science and engineering and to stimulate interest rather than take direct action. Significantly, the glamor of atomics gives the new industry an edge over others in competing for skilled people.

Atomic information. Security restrictions on the release of information could be one of the sleeping dogs of the next Congress. The squabbles right now is down from its former high perch. This is due to industry's resignation to accept security bans as a necessary evil, at least for the present. Also, AEC has turned loose a deluge of information that overwhelms newcomers to the field.

Experienced hands have a dif-

ferent problem. While special access is made to top secret data, they are continually bumping up against the secrecy curtain.

The dog that might wake up barking next year is a different breed from these everyday types, however. It concerns thermonuclear power. Complaints continue to pile up against AEC secrecy on Project Sherwood, the attempt to unlock the unlimited energy in hydrogen atoms. This involves the process of fusion instead of fission. If ever proved

The legitimate object of government is to do for a community of people whatever they need to have done but cannot do at all, or cannot so well do, for themselves in their separate and individual capacities. But in all that people can individually do as well for themselves, government ought not to interfere.

—Abraham Lincoln

workable, it could revolutionize atomic power development.

Critics of the secrecy mantle thrown over Sherwood contend this hides nothing the Russians have not already demonstrated they know. They charge its main effect is to bar the free entrance of ideas that might crack the fusion research bottleneck. These views are getting close attention at the Capitol.

Radiation and regulation. These are among the most complicated subjects in nucleonics. The murkiness of the problem will be dramatically pointed up by hearings this month on safety aspects of the atomic power plant Detroit Edison and others in the Power Reactor Development Company are building at Monroe, Mich. Here are the outlines of the issue:

First, as was evident in the campaign clash over the seriousness of H-bomb fall-out, there is no clear-cut answer to such questions as: How serious is radiation as a job hazard? How much can workmen take without injury? How can they be protected?

A committee on radiation of the National Bureau of Standards has drawn up the basic standard. The AEC requires this level to be observed in its own plants, among its contractors and by those it licenses to handle atomic facilities. But some experts criticize the level as too high, others as too low.

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Second, AEC's safety-compliance requirements put the government effectively into the business of regulating health and safety in most of the 48 states. Advocates of states' rights complain about this intrusion and urge that jurisdiction over atomic businesses be left up to the individual states.

Labor in particular opposes this idea. Backed by others, union officials maintain that the job of setting and enforcing atomic safety standards is too profound to entrust to governmental units which have little experience and few experts on the subject.

Representative Carl T. Durham (D-N. C.), currently vice chairman of the Atomic Committee and now in line for the chairmanship, will heavily influence the outcome of this dispute. He has leaned in the past toward state jurisdiction. Action in Congress will probably take the form of wide exploration but few conclusive decisions, at least for some time. Opinion tends toward letting the federal government set the standards, with enforcement being left up to the states.

The AEC. There is a good deal of sentiment in favor of splitting the AEC into two segments, divorcing promotional and operational functions from regulatory work. Basically, it is argued, the two fields are contradictory: You can hardly objectively control operations with one hand while trying to advance or promote them with the other, critics say.

These considerations have given rise to a dual setup of the federal agencies in the maritime and aviation fields. Atomic energy could eventually face the same kind of control, and studies are being made in this direction. Many feel threats to cut up the AEC are politically inspired to some degree, though, and therefore discount early action.

H-bomb. Businessmen may find that they are indirectly contending with the wrangle over weapons testing and fall-out dangers. Certainly, the campaign has raised as many questions on the issue as it has supplied answers. Congressmen thus want to take their own long look at the controversy.

The danger in this is that the subject may prove so attractive as an attention-getter that Congress will find itself brushing aside vital matters in the civilian field. The public is likely to hear as much about the H-bomb peril in the future as in the past.

With or without the bomb issue, action on the atom in the 85th Congress can only prove of top interest to business.—JAMES N. SITES

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PAGE
Acme Visible Records, Inc. 75 <i>E. H. Brown, Chicago</i>
Aero Mayflower Transit Company.. 67 <i>Caldwell, Larkin & Siden-Van Riper, Indianapolis</i>
Air Express, Division of Railway Express Agency..... 11 <i>Robert W. Orr, New York</i>
American Tel. & Tel. Co. (Inf.).... 1 <i>N. W. Ayer, Philadelphia</i>
American Tel. & Tel. Co. (Class.).... 61 <i>Cunningham & Walsh, New York</i>
American Tel. & Tel. Co. (I.L.).... 93 <i>N. W. Ayer, Philadelphia</i>
American Trucking Associations... 4 <i>Allman Company, Detroit</i>
Association of American Railroads 23 <i>Benton & Bowles, New York</i>
Bay West Paper Company..... 73 <i>Klau-Van Pietersom-Dunlap, Milwaukee</i>
Box 2255..... 89 <i>Direct</i>
Burroughs Corporation..... 79 <i>Campbell-Ewald, Detroit</i>
Business Electronics, Inc. 90 <i>Douglas L. Burgess, San Francisco</i>
Butler Manufacturing Company.... 10 <i>Aubrey, Finlay, Marley & Hodgson, Chicago</i>
Cardmaster Company..... 74 <i>Grant, Schwenck & Baker, Chicago</i>
Carey, E. A., Pipe Company..... 89 <i>Grant, Schwenck & Baker, Chicago</i>
Chamber of Commerce of the U. S. 76, 77 <i>Direct</i>
Chamber of Commerce of the U.S.... 91 <i>Gray & Rodgers, Philadelphia</i>
Colorado, State of..... 92 <i>Ball & Davidson, Denver</i>
Commercial Credit Company..... 12 <i>VanSant, Dugdale, Baltimore</i>
Eastman Kodak Company..... 5 <i>J. Walter Thompson, New York</i>
Fairchild Engine & Airplane Corp... 13 <i>Gaynor, Colman, Prentis & Varley, New York</i>
Frick Company, Inc. 85 <i>Waynesboro Advertising, Waynesboro</i>
General Electric Co., Technical Products Dept., Communications Equip. Section..... 70 <i>Maxon, Inc., New York</i>
Georgia Department of Commerce.. 57 <i>Tucker Wayne, Atlanta</i>
Globe-Wernicke Company... 3rd Cover <i>Strauchen & McKim, Cincinnati</i>
Graphic Systems, Inc..... 89 <i>Diener & Dorskind, New York</i>
Hardware Mutuals..... 16 <i>Roche, Williams & Cleary, Chicago</i>
Home Insurance Company..... 83 <i>Albert Frank-Guenther Law, New York</i>
Insurance Company of North America..... 50 <i>N. W. Ayer, Philadelphia</i>
Lily Tulip Cup Corp. 53 <i>Grey Advertising, New York</i>
Marsh Stencil Machine Company... 90 <i>Roman Advertising, St. Louis</i>
Master Mechanic Manufacturing Company 74 <i>Franklin Fisher, Milwaukee</i>
May, George S., Company.... 2nd Cover <i>Allan Marin, Chicago</i>
Modine Manufacturing Company.... 92 <i>Klau-Van Pietersom-Dunlap, Milwaukee</i>
National Business Consultants..... 89 <i>Vander Boom, Hunt, McNaughton, Los Angeles</i>
New York Life Insurance Company 14 <i>Compton Advertising, New York</i>
Oxford Filing Supply Company.... 70 <i>Joseph Reiss, New York</i>
Pennsylvania Railroad..... 49 <i>Al Paul Lefton, Philadelphia</i>
Photostat Corporation 59 <i>Knight & Gilbert, Providence</i>
Pitney-Bowes, Inc. 4th Cover <i>L. E. McGivern, New York</i>
Prairie Schooner, Inc. 74 <i>Juhl Advertising, Elkhart</i>
Pratt-Daniel Corp. 73 <i>Pearsall & Schael, East Norwalk</i>
Quantity Photos, Inc. 89 <i>Sylvan Pasternak, Los Angeles</i>
Quebec, Province of, Tourist Bureau 74 <i>Russell T. Kelley, Montreal</i>
Remington Rand..... 24 <i>Paris & Peart, New York</i>
Schieffelin & Company..... 65, 87 <i>Abbott Kimball, New York</i>
Shaw-Barton, Inc. 75 <i>Bayless-Kerr, Cleveland</i>
Smith-Corona, Inc. 71 <i>Cunningham & Walsh, New York</i>
Stromberg-Carlson Company..... 6 <i>Charles L. Rumrill, Rochester</i>
Studebaker-Packard Corp. 55 <i>Benton & Bowles, New York</i>
Texas Gas Transmission Corp. 19 <i>Bozell & Jacobs, New York</i>
Travelers Insurance Company..... 20 <i>Young & Rubicam, New York</i>
Tropical Paint Company..... 63 <i>Fred M. Randall, Detroit</i>
Union Pacific Railroad..... 15 <i>Caples Company, Chicago</i>
U. S. Thermo Control Company..... 69 <i>Bozell & Jacobs, Minneapolis</i>
Utah Power & Light Company..... 2 <i>Gillham Advertising, Salt Lake City</i>
Wagner Electric Corp. 85 <i>Arthur E. Mogge, St. Louis</i>
Wellington Sears Company..... 47 <i>Ellington & Company, New York</i>
Weston, Bryon, Company..... 79 <i>Walter B. Snow, Boston</i>



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THE COMING CONTROVERSY over atomic power would have surprised the founders of this country.

The atom itself would not. They were forward-looking men who expected scientific progress. They were at some pains to set up a government under which such progress could flourish. Beyond that they saw no need to go.

The idea that government is abdicating a major responsibility when it fails to go into business is based on later and less virile thinking.

As applied to the development of atomic power, this idea is supported by arguments chiefly remarkable for their longevity. In brief, these arguments maintain that government operation means faster progress, wider benefits to the people and the husbanding of national resources that industry's greed for profits might waste.

As applied specifically to atom power, the argument is, first, private concerns, wedded to their profit and loss statements, cannot be expected to gamble on bold new types of nuclear power plants that may open the door to new miracles but may also end in failure. Second, American taxpayers already have spent \$13 billion on atomic research. Permitting private companies to benefit from this expenditure would be a giveaway of something that belongs rightfully to the people.

The recent introduction of new model automobiles demonstrates how baseless is the first fear. Although

sales have declined in the past few months—a condition which operators wedded to profit and loss statements might meet by retrenching—every company is gambling on bold new models which may mean new transportation miracles.

It is appropriate to speculate on the type of automobiles we might be driving had we depended on government operation of this industry. Could government offer so wide a choice of makes and models? Could it even have chosen the cars that were to survive from the more than 2,000 that have been offered? Sectional political strength or economic distress could have made it expedient to keep certain factories working whether or not the public wanted their products.

As with autos, so with atoms. The risk of failure has not stopped a group of companies headed by Detroit Edison from beginning construction of a \$55 million fast breeder—one of the boldest types of reactors possible at this stage of atomic science. Alabama Power has shown how little the love of profits hampers risk-taking by putting \$800,000 into this research and development with the expectation of gaining nothing but knowledge.

The argument that public investment of \$13 billion converts atomic information into a sort of national resource seems fairly obscure. The government has a considerable investment in hybrid corn research, too, but nobody has suggested that Washington should, therefore, produce the nation's corn. It is also reasonable to suppose that the atom paid off its public investment in two loud installments which ended World War II.

In any case, whatever industrial stake the public still has in the atom would, under the best known proposal, require another \$400 million of tax money to get power production started. The fact that government spent this money would do nothing to reduce the risk of failure. It would merely concentrate it.

Under private operation, atomic progress will be spread among the groups—six at present—each proceeding in the direction that seems to it to promise the greatest hope of success. If some fail because their efforts did not benefit the people, the others will remain to add to atomic knowledge and to national progress.

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